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A Collection of Test Problems for Discrete Linear L_1 Data Fitting

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Luther H. Hodges, Jr., ***Under Secretary***

Jordan J. Baruch, ***Assistant Secretary for Science and Technology***

NATIONAL BUREAU OF STANDARDS, Ernest Ambler, ***Director***

ABSTRACT

This document assembles 27 test problems representing a variety of examples in which least absolute deviation (or L_1) data fitting has been used. The problems were collected from the literature, from the authors of several L_1 approximation codes, and from examples encountered in practice. Optimal L_1 solutions to these problems (objective function value and solution vector) have been obtained using a double-precision computer code designed for checking the Kuhn-Tucker conditions and for performing an accurate reinversion of the optimal basis.. Special problem characteristics such as alternative optima, degeneracy, and rank loss are also noted. This set of test problems has proven useful in evaluating and improving the performance of L_1 codes as well as in suggesting types of problem structures that might be mimicked by problem generators.

Key Words: Algorithm testing; approximation; curve fitting; least absolute deviation; polynomial approximation; spline fitting; test data; test problems

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1. INTRODUCTION

The fitting of various models to existing data and the discrete approximation of given functional relations are tasks frequently encountered in applied mathematics. An extensively studied and used technique in this regard is that of least squares estimation [9, 19, 21], in which the sum of squared residuals between actual and predicted values is minimized. This approach enjoys a number of useful advantages: the least squares estimates can be found by solving (with appropriate care) a system of linear equations; the statistical properties of such estimators are well established; and, under the assumption of normally distributed errors, a number of statistical tests of hypotheses can be carried out.

In recent years interest has been rekindled in alternative estimation methods, which can be used either in place of or in conjunction with the technique of least squares [3, 10, 22, 26]. Of particular interest is the method of least absolute deviation (or L_1) data fitting, where the sum of absolute values of the residuals is minimized. This approach also has certain desirable properties: the L_1 estimators are maximum likelihood estimators when the errors derive from a Laplace distribution [22]; they can be more efficient than least squares estimators [22, 23]; they are "robust" with respect to long-tailed distributions [13, 14] and do not give undue weight to observations which represent outliers. Moreover, with the advent of reasonably efficient procedures for constrained optimization (descent methods, linear programming), obtaining such estimates is computationally feasible.

A number of algorithms for L_1 data fitting problems have been recently advanced [1, 2, 5, 6, 24, 25], and preliminary comparative testing has been performed at the National Bureau of Standards using four generally available L_1 computer codes [12]. Controlled experiments with these codes are facilitated by the availability of well-defined classes of test problems so that results obtained by sampling a finite number of test problems from a class will possess some measure of validity. For this reason, generators for problem classes with controllable characteristics have been developed [8, 16] and used in performing comparisons of L_1 codes [12]. In addition, a set of 27 hand-picked problems was assembled and employed in an evaluation of the L_1 codes. It is significant that although all four codes "correctly" solved each generated problem within certain classes, this was decidedly not the case for the 27 hand-picked problems.

It is believed, therefore, that specifying these 27 problems in some detail would be a useful service both to code developers and to those involved in testing L_1 codes. That is the purpose of this document. In addition to presenting the data values themselves, we also report relevant problem characteristics (e.g. degeneracy, rank deficiency, uniqueness of solution) and verified solution values. This material should allow code developers to perform an initial benchmarking of their procedures and to identify possible areas for algorithmic enhancement. In addition, the problems described here may suggest types of problem structures to be mimicked by problem generators [8, 16, 17, 19].

Section 2 defines the general L_1 data fitting problem and reviews certain relevant features of such problems. Section 3 discusses the selection of the 27 hand-picked problems and documents the format of these problems as well as their solutions. The procedure used for verifying optimal solutions to the test problems is described in Section 4. Individual data values are tabulated in Section 5, and verified solutions are given in Section 6.

2. L_1 DATA FITTING PROBLEMS

Given n sets of observations on one dependent variable y and m independent variables $x_1,\ldots,x_m$, the discrete linear L_1 data fitting problem is that of determining $\beta_1,\ldots,\beta_m$ to minimize

$$\phi(\beta_1,\ldots,\beta_m) = \sum_{i=1}^{n} |y_i - \sum_{j=1}^{m} \beta_j x_{ij}| \ .$$

Here, y_i refers to the i-th observation on variable y, and x_{ij} refers to the i-th observation on variable x_j. In other words, given n observations we wish to estimate $m \leq n$ parameters by minimizing the sum of the absolute values of the residuals

$$e_i = e_i(\beta_1,\ldots,\beta_m) = y_i - \sum_{j=1}^{m} \beta_j x_{ij} \ .$$

A set of $\beta_1^*,\ldots,\beta_m^*$ for which

$$\phi^* = \phi(\beta_1^*,\ldots,\beta_m^*) = \min\{\phi(\beta_1,\ldots,\beta_m): \ \beta j \epsilon R; \ j=1,\ldots,m\}$$

is termed an optimal solution vector to the L_1 data fitting problem, and ϕ^* is termed the optimal objective function value.

Clearly, the problem data can be represented using an n x 1 column vector y and an n x m design matrix X. The rank of matrix X is denoted by $r \leq m$; a given L_1 problem has full rank if r = m and has rank loss m - r otherwise.

Unlike the case for least squares (L_2) approximation, the optimal L_1 solution vector may not be unique, even when the problem has full rank. In the presence of rank loss, the optimal solution vector will definitely not be unique. It is known [4,11] that an optimal solution vector can always be found that interpolates at least r of the data points: that is, at least r residuals are identically zero at the solution. For our purposes, the problem is said to exhibit degeneracy if $z > r$ residuals are zero at an optimal solution, with degree of degeneracy z - r.

A basic solution for the L_1 data fitting problem is obtained by selecting r data points to be interpolated exactly--data points corresponding to r independent rows (observations) of the design matrix are chosen to have zero residuals. A number of algorithms for solving discrete L_1 data fitting problems examine only these basic solutions and proceed in a systematic fashion from one basic solution to the next. A collection of r rows from X that defines a basic solution is said to constitute a set of r active contraints. In the presence of degeneracy, the same optimal solution vector will correspond to several selections of active constraints, or basic solutions. If the problem has full rank, then a unique set $\{\beta_1,\ldots,\beta_m\}$ is determined by selecting any r = m constraints to be active.

3. THE 27 HAND-PICKED PROBLEMS

The 27 problems compiled and studied in this report were obtained in the following ways.

1. By selecting problems described or solved in journal articles or technical reports

2. By soliciting test problems from the authors of various L_1 data fitting codes[1]

3. By collecting problems from actual applications

Table 1 shows various sources for the hand-picked problems categorized by these three headings. In addition, the problems can be roughly classified into the following structural types.

1. General data fitting problems

2. Spline-fitting problems

3. Polynomial approximation problems

4. Others

The disposition of the 27 hand-picked problems by these problem types is shown in Table 2.

We have provided listings of the input data for all 27 problems in Section 5. The first line is a header which gives a brief identification of the problem. The next line gives the values for n (the number of observations) and m (the number of parammeters) in FORTRAN format (2I5). The succeeding lines contain the input data for successive observation sets $(y_i, x_{i1}, \ldots, x_{im})$ in FORTRAN format (5E15.7).

Input values are given to seven significant figures when necessary. Because conversion of real numbers to the internal representation of any computer generally involves a round-off or truncation error, the given (single-precision) input values may define different internally represented L_1 problems for different machines. The choice of seven significant decimal digits was made to enhance the "portability" of such problems to other machines. Our current study, it should be noted, was performed on the National Bureau of Standards' UNIVAC 1108, Exec 8 Operating System. On this computer, single-precision floating-point numbers are represented using a 36-bit word, with one sign bit, eight exponent bits and twenty-seven mantissa bits (approximately 8.1 decimal digits).

---

[1]We are especially indebted to N. Abdelmalek and R. Bartels for a number of these test problems.

Table 1

Sources of the 27 Hand-Picked Problems

Articles	Authors	Applications
HP1 HP2 HP6 HP7 HP8-HP26	HP3 HP8-HP26	HP4 HP5 HP27

Table 2

Structural Types for the 27 Hand-Picked Problems

General	Spline	Polynomial	Other
HP4 HP15 HP25	HP16 HP27	HP1-HP3 HP6-HP14 HP17-HP20 HP26	HP5* HP21-HP24**

* Matrix Inversion
** Trigonometric Approximation

Section 6 contains a summary, for each problem of its source, its characteristics, and its verified solution(s). Each of the items in this summary is discussed in turn.

1. Identification. Each problem is assigned a unique identifying code number (HP1-HP27).

2. Source. A brief reference is provided to an article discussing the problem, or to the type of application giving rise to the problem.

3. Characteristics. Various characteristics of the input problem are given, including the number of parameters (m), the number of observations (n), and the rank of the design matrix.

4. Solution. An optimal set of active constraints and associated numerical solution values are provided as follows.

   (a) the (unique) optimal objective function value ϕ^* is given, accurate to the number of significant digits shown.

   (b) A set of active constraints defining an optimal solution vector is given. In the case of degeneracy, alternative sets of active constraints defining the same solution vector are indicated.

   (c) Numerical values for the solution vector $\underline{\beta}^* = (\beta_1^*, \ldots, \beta_m^*)$ are given, accurate to the number of significant digits shown.

   (d) An estimate of the 1-condition number [7, 20] of the final basis matrix B defined by the set of active constraints. Since the solution vector $\underline{\beta}^*$ is obtained by solving a linear system with coefficient matrix B, the 1-condition number provides information on the accuracy obtainable in $\underline{\beta}^*$ from the input data (accurate to seven decimal digits). Namely, if this quantity is approximately 10^d, then the components of $\underline{\beta}$ can usually be expected to have d fewer significant figures of accuracy than the elements of B [7].

   (e) An indicator is given of whether or not the problem possesses a unique optimal solution vector $\underline{\beta}^*$. If there exist alternative optimal solution vectors to the probvlem (in which case there are infinitely many, since the set of solution vectors forms a convex set), then another optimal basic solution vector is given, together with its defining set of active constraints and the associated condition number.

Solutions are given, when possible, as simple fractions. Otherwise, solution values are provided to seven significant decimal digits. Optimal solutions were verified by means of a computer routine designed to check the Kuhn-Tucker conditions of an associated linear program. (Details of the procedure used to verify optimal solutions are provided in Section 4.) Essentially, for a given set of active contraints, the routine calculates (in double-precision) both the solution vector $\underline{\beta}$ and the objective function value ϕ. It is then determined whether or not this set of active contstraints, and the corresponding solution vector, do indeed represent an optimal solution to the given L_1 problem.

4. VERIFICATION OF OPTIMAL L_1 SOLUTIONS

In this section, we describe a method for verifying whether a purported solution to a discrete linear L_1 data fitting problem is in fact an optimal solution. Recall that the problem of interest is that of determining $\beta_1,\ldots,\beta_m$ to

$$(1)\quad \text{minimize} \sum_{i=1}^{n} \left| y_i - \sum_{j=1}^{m} \beta_j x_{ij} \right| .$$

Without loss of generality, we can assume that the matrix $X = (x_{ij})$ has rank $r \leq m$ and that the first r columns of X are linearly independent. Since an optimal solution can be obtained with $\beta_j = 0$ for $j > r$, the original L_1 approximation problem can be formulated [16] as the following linear program:

$$\text{minimize} \quad \sum_{i=1}^{n} \alpha_i$$

subject to

$$\alpha_i + \sum_{j=1}^{r} \beta_j x_{ij} \geq y_i , \qquad i=1,\ldots,n ,$$

$$\alpha_i - \sum_{j=1}^{r} \beta_j x_{ij} \geq -y_i , \qquad i=1,\ldots,n ,$$

where α_i represents the absolute value of the i-th residual

$$e_i = y_i - \sum_{j=1}^{r} \beta_j x_{ij} .$$

Necessary and sufficient conditions for $\alpha_1^*,\ldots,\alpha_n^*$, $\beta_1^*,\ldots,\beta_r^*$ to be an optimal solution to the above problem are provided by the Kuhn-Tucker conditions [15]: there must exist $u_1,\ldots,u_n$, $v_1,\ldots,v_n$ such that

$$(2.1)\qquad \alpha_i^* + \sum_{j=1}^{r} \beta_j^* x_{ij} \geq y_i , \qquad i=1,\ldots,n ,$$

$$(2.2)\qquad \alpha_i^* - \sum_{j=1}^{r} \beta_j^* x_{ij} \geq -y_i , \qquad i=1,\ldots,n ,$$

$$(2.3)\qquad u_i + v_i = 1 , \qquad i=1,\ldots,n ,$$

$$(2.4) \qquad \sum_{i=1}^{n} (u_i - v_i)x_{ij} = 0 , \qquad j=1,\ldots,r ,$$

$$(2.5) \qquad u_i \left[\alpha^* + \sum_{j=1}^{r} \beta^*_j x_{ij} - y_i \right] = 0 , \qquad i=1,\ldots,n ,$$

$$(2.6) \qquad v_i \left[\alpha^*_i - \sum_{j=1}^{r} \beta^*_j x_{ij} + y_i \right] = 0 , \qquad i=1,\ldots,n ,$$

$$(2.7) \qquad u_i, v_i \geq 0 , \qquad i=1,\ldots,n .$$

These conditions can be considerably simplified and then applied to judge whether a given $\underline{\beta} = (\beta_1,\ldots,\beta_r)$ represents an optimal L_1 solution to (1). In order to achieve this simplification, let us partition, for a given $\underline{\beta}$, the index set $N = \{1,\ldots,n\}$ into three disjoint subsets N^+, N^-, N^0:

$$N^+ = \{i \in N: e_i > 0\} ,$$

$$N^- = \{i \in N: e_i < 0\} ,$$

$$N^0 = \{i \in N: e_i = 0\} .$$

When inequalities (2.1) and (2.2) are summed for fixed i, we obtain $\alpha^*_i \geq 0$. Thus, if $i \in N$ (so that $e_i > 0$), then $\alpha^*_i + e_i > 0$. From (2.6) it follows that $v_i = 0$ for $i \in N^+$, and from (2.3) that $u_i = 1$. In a similar fashion, if $i \in N$ then $e_i < 0$ and $\alpha^*_i - e_i > 0$, whence using (2.5) and (2.3) we obtain $u_i = 0$ and $v_i = 1$.

Equation (2.4) can be rewritten as

$$\sum_{i \in N^+} (u_i - v_i)x_{ij} + \sum_{i \in N^-} (u_i - v_i)x_{ij} + \sum_{i \in N^0} (u_i - v_i)x_{ij} = 0$$

or, using the above values for u_i and v_i ,

$$\sum_{i \in N^+} x_{ij} - \sum_{i \in N^-} x_{ij} + \sum_{i \in N^0} (u_i - v_i)x_{ij} = 0 .$$

This latter relation can be recast, via (2.3), as

$$(3)\quad \sum_{i\in N^0} u_i x_{ij} = 1/2 \left\{ \sum_{i\in N^-} x_{ij} + \sum_{i\in N^0} x_{ij} - \sum_{i\in N^+} x_{ij} \right\}, \qquad j=1,\ldots,r .$$

Recall that for given values $\beta_1,\ldots\beta_r$ we have $\alpha_i = |y_i - \sum_{i=1}^{r} \beta_j x_{ij}|$, $i=1,\ldots,n$. Then conditions (2.1) and (2.2) are automatically satisfied, and the remaining conditions obtain if and only if there exist values $\underline{u} = (u_1,\ldots,u_n)$ that satisfy equation (3) and

$$(4)\quad 0 \leq u_i \leq 1 , \qquad i=1,\ldots,n .$$

The relations of (3) simply represent a linear system $\underline{u}B=\underline{c}$ of r equations in $z = |N^0|$ unknowns. In the absence of degeneracy (r=z) and if matrix B is nonsingular, then equation (3) can be solved explicitly as $\underline{u} = \underline{c}B^{-1}$ and condition (4) can be readily checked. In the cases when either B is singular or z>r (degeneracy), we can determine whether there is a feasible solution to (3) and (4) by using linear programming. A "Phase I" calculation can be readily carried out using artificial variables [15] to discover whether the following system does indeed admit a feasible solution:

$$(5)\quad \begin{aligned} \underline{u}B &= \underline{c} , \\ \underline{u} &\leq \underline{1} , \\ \underline{u} &\geq \underline{0} . \end{aligned}$$

In the computer program used to implement these ideas, the data values $\underline{y}$ and X are input, together with a candidate set of r active constraints $\{i_1,\ldots,i_r\}$, associated with independent rows of the design matrix. The associated solution vector $\underline{\beta}$ is then obtained by solving in double-precision the (nonsingular) system $A\underline{\beta}=\underline{y}$, where $A=(x_{ik},j)$ is the r x r submatrix corresponding to the active constraint rows and the first r columns of X. From these β_j values, the residuals e_i (i=1,...,n) are determined and the index sets N^+, N^-, N^0 are obtained. At this point the corresponding objective function value

$$\phi(\beta_1,\ldots,\beta_r) = \sum_{i=1}^{n} |e_i|$$

is also calculated in double-precision. Finally, the existence of values u_i that satisfy (3) and (4) is checked either by direct (double-precision) solution of $\underline{u}B=\underline{c}$ or by applying a revised simplex computer code to system (5). If such values exist (to within pre-specified tolerances), then $\{i_1,\ldots,i_r\}$ is deemed an optimal set of active constraints, with optimal solution vector $\underline{\beta}$ and optimal objective function value ϕ. Otherwise, the candidate solution is reported as nonoptimal, to working precision.

5. LISTING OF INPUT PROBLEM DATA

```
HP1 : POLYNOMIAL APPROXIMATION PROBLEM
    5     2
    .1000000+01     .1000000+01     .1000000+01
    .1000000+01     .1000000+01     .2000000+01
    .2000000+01     .1000000+01     .3000000+01
    .3000000+01     .1000000+01     .4000000+01
    .4000000+01     .1000000+01     .5000000+01
```

```
HP2 : POLYNOMIAL APPROXIMATION PROBLEM
  17     3
   .2800000+02     .1000000+01    -.3000000+01     .6400000+02
  -.3900000+02     .1000000+01    -.7000000+01     .4900000+02
  -.4000000+02     .1000000+01    -.6000000+01     .3600000+02
  -.1000000+01     .1000000+01    -.5000000+01     .2500000+02
   .2300000+02     .1000000+01    -.4000000+01     .1600000+02
   .3400000+02     .1000000+01    -.3000000+01     .9000000+01
   .2500000+02     .1000000+01    -.2000000+01     .4000000+01
   .4000000+02     .1000000+01    -.1000000+01     .1000000+01
   .4300000+02     .1000000+01     .0000000        .0000000
   .2900000+02     .1000000+01     .1000000+01     .1000000+01
   .1400000+02     .1000000+01     .2000000+01     .4000000+01
   .1200000+02     .1000000+01     .3000000+01     .9000000+01
  -.1600000+02     .1000000+01     .4000000+01     .1600000+02
  -.1400000+02     .1000000+01     .5000000+01     .2500000+02
  -.4600000+02     .1000000+01     .6000000+01     .3600000+02
  -.6800000+02     .1000000+01     .7000000+01     .4900000+02
  -.2400000+02     .1000000+01     .8000000+01     .6400000+02
```

```
HP3 : POLYNOMIAL APPROXIMATION PROBLEM
    5     2
    .1140000+03     .1000000+01     .3500000+02
    .1240000+03     .1000000+01     .4500000+02
    .1430000+03     .1000000+01     .5500000+02
    .1580000+03     .1000000+01     .6500000+02
    .1660000+03     .1000000+01     .7500000+02
```

```
HP4 : GENERAL DATA FITTING PROBLEM
 135     6
   .1600000+02     .1400000+02     .1000000+01     .1000000+01     .0000000
   .1960000+03     .1000000+01
   .2600000+02     .1900000+02     .1000000+01     .1000000+01     .0000000
   .3610000+03     .1000000+01
   .1700000+02     .1400000+02     .1000000+01     .1000000+01     .0000000
   .1960000+03     .1000000+01
   .2500000+02     .1600000+02     .1000000+01     .1000000+01     .0000000
   .2560000+03     .1000000+01
   .2300000+02     .9000000+01     .1000000+01     .1000000+01     .0000000
   .8100000+02     .1000000+01
   .2900000+02     .1900000+02     .1000000+01     .1000000+01     .0000000
   .3610000+03     .1000000+01
   .2400000+02     .1700000+02     .1000000+01     .1000000+01     .0000000
   .2890000+03     .1000000+01
   .2700000+02     .1400000+02     .1000000+01     .1000000+01     .0000000
   .1960000+03     .1000000+01
   .2300000+02     .1000000+02     .1000000+01     .1000000+01     .0000000
   .1000000+03     .1000000+01
   .3500000+02     .1900000+02     .1000000+01     .1000000+01     .0000000
   .3610000+03     .1000000+01
   .2500000+02     .1700000+02     .1000000+01     .1000000+01     .0000000
   .2890000+03     .1000000+01
   .2300000+02     .1200000+02     .1000000+01     .1000000+01     .0000000
   .1440000+03     .1000000+01
   .2300000+02     .1100000+02     .1000000+01     .1000000+01     .0000000
   .1210000+03     .1000000+01
   .3800000+02     .1900000+02     .1000000+01     .1000000+01     .0000000
   .3610000+03     .1000000+01
   .2500000+02     .2100000+02     .1000000+01     .1000000+01     .0000000
   .4410000+03     .1000000+01
   .3700000+02     .2300000+02     .1000000+01     .1000000+01     .0000000
   .5290000+03     .1000000+01
   .3000000+02     .1200000+02     .1000000+01     .1000000+01     .0000000
   .1440000+03     .1000000+01
   .2800000+02     .1400000+02     .1000000+01     .1000000+01     .0000000
   .1960000+03     .1000000+01
   .2300000+02     .8000000+01     .1000000+01     .1000000+01     .0000000
   .6400000+02     .1000000+01
   .2600000+02     .1600000+02     .1000000+01     .1000000+01     .0000000
   .2560000+03     .1000000+01
   .1900000+02     .1200000+02     .1000000+01     .1000000+01     .0000000
   .1440000+03     .1000000+01
   .1700000+02     .1600000+02     .1000000+01     .1000000+01     .0000000
   .2560000+03     .1000000+01
   .3600000+02     .1900000+02     .1000000+01     .1000000+01     .0000000
   .3610000+03     .1000000+01
   .2200000+02     .1000000+02     .1000000+01     .1000000+01     .0000000
   .1000000+03     .1000000+01
   .2300000+02     .1100000+02     .1000000+01     .1000000+01     .0000000
   .1210000+03     .1000000+01
   .2400000+02     .1300000+02     .1000000+01     .1000000+01     .0000000
   .1690000+03     .1000000+01
   .2200000+02     .9000000+01     .1000000+01     .1000000+01     .0000000
   .8100000+02     .1000000+01
   .3900000+02     .2400000+02     .1000000+01     .1000000+01     .0000000
```

.5760000+03	.1000000+01			
.3400000+02	.1100000+02	.1000000+01	.1000000+01	.0000000
.1210000+03	.1000000+01			
.2200000+02	.1600000+02	.1000000+01	.1000000+01	.0000000
.2560000+03	.1000000+01			
.1100000+02	.9000000+01	.1000000+01	.1000000+01	.0000000
.8100000+02	.1000000+01			
.1900000+02	.1600000+02	.1000000+01	.1000000+01	.0000000
.2560000+03	.1000000+01			
.2100000+02	.1400000+02	.1000000+01	.1000000+01	.0000000
.1960000+03	.1000000+01			
.2800000+02	.1800000+02	.1000000+01	.1000000+01	.0000000
.3240000+03	.1000000+01			
.2800000+02	.1800000+02	.1000000+01	.1000000+01	.0000000
.3240000+03	.1000000+01			
.3300000+02	.1600000+02	.1000000+01	.1000000+01	.0000000
.2560000+03	.1000000+01			
.3600000+02	.2500000+02	.1000000+01	.1000000+01	.0000000
.6250000+03	.1000000+01			
.3600000+02	.2200000+02	.0000000	.1000000+01	.0000000
.4840000+03	.1000000+01			
.2600000+02	.1400000+02	.0000000	.1000000+01	.0000000
.1960000+03	.1000000+01			
.2400000+02	.2000000+02	.0000000	.1000000+01	.0000000
.4000000+03	.1000000+01			
.3000000+02	.1200000+02	.0000000	.1000000+01	.0000000
.1440000+03	.1000000+01			
.3800000+02	.2100000+02	.0000000	.1000000+01	.0000000
.4410000+03	.1000000+01			
.3200000+02	.1300000+02	.0000000	.1000000+01	.0000000
.1690000+03	.1000000+01			
.3400000+02	.1800000+02	.0000000	.1000000+01	.0000000
.3240000+03	.1000000+01			
.2200000+02	.1400000+02	.0000000	.1000000+01	.0000000
.1960000+03	.1000000+01			
.2700000+02	.1900000+02	.0000000	.1000000+01	.0000000
.3610000+03	.1000000+01			
.3900000+02	.2100000+02	.0000000	.1000000+01	.0000000
.4410000+03	.1000000+01			
.2900000+02	.1800000+02	.0000000	.1000000+01	.0000000
.3240000+03	.1000000+01			
.3900000+02	.1600000+02	.0000000	.1000000+01	.0000000
.2560000+03	.1000000+01			
.2100000+02	.1900000+02	.0000000	.1000000+01	.0000000
.3610000+03	.1000000+01			
.2500000+02	.1700000+02	.0000000	.1000000+01	.0000000
.2890000+03	.1000000+01			
.2500000+02	.1400000+02	.0000000	.1000000+01	.0000000
.1960000+03	.1000000+01			
.3500000+02	.1800000+02	.0000000	.1000000+01	.0000000
.3240000+03	.1000000+01			
.4200000+02	.2200000+02	.0000000	.1000000+01	.0000000
.4840000+03	.1000000+01			
.2900000+02	.1000000+02	.0000000	.1000000+01	.0000000
.1000000+03	.1000000+01			
.1800000+02	.1700000+02	.0000000	.1000000+01	.0000000
.2890000+03	.1000000+01			
.2300000+02	.1800000+02	.1000000+01	-.1000000+01	-.1000000+01

.3240000+03	.1000000+01			
.2800000+02	.2000000+02	.1000000+01	-.1000000+01	-.1000000+01
.4000000+03	.1000000+01			
.8000000+01	.5000000+01	.1000000+01	-.1000000+01	-.1000000+01
.2500000+02	.1000000+01			
.1600000+02	.1300000+02	.1000000+01	-.1000000+01	-.1000000+01
.3240000+03	.1000000+01			
.1200000+02	.9000000+01	.1000000+01	-.1000000+01	-.1000000+01
.8100000+02	.1000000+01			
.2100000+02	.1600000+02	.1000000+01	-.1000000+01	-.1000000+01
.2560000+03	.1000000+01			
.1900000+02	.1600000+02	.1000000+01	-.1000000+01	-.1000000+01
.2560000+03	.1000000+01			
.2000000+02	.1400000+02	.1000000+01	-.1000000+01	-.1000000+01
.1960000+03	.1000000+01			
.2400000+02	.2400000+02	.1000000+01	-.1000000+01	-.1000000+01
.5760000+03	.1000000+01			
.1700000+02	.1600000+02	.1000000+01	-.1000000+01	-.1000000+01
.2560000+03	.1000000+01			
.1400000+02	.1100000+02	.1000000+01	-.1000000+01	-.1000000+01
.1210000+03	.1000000+01			
.1800000+02	.1500000+02	.1000000+01	-.1000000+01	-.1000000+01
.2250000+03	.1000000+01			
.1400000+02	.2100000+02	.1000000+01	-.1000000+01	-.1000000+01
.4410000+03	.1000000+01			
.1500000+02	.1400000+02	.1000000+01	-.1000000+01	-.1000000+01
.1960000+03	.1000000+01			
.1400000+02	.2200000+02	.1000000+01	-.1000000+01	-.1000000+01
.4840000+03	.1000000+01			
.1300000+02	.1600000+02	.1000000+01	-.1000000+01	-.1000000+01
.2560000+03	.1000000+01			
.1800000+02	.9000000+01	.1000000+01	-.1000000+01	-.1000000+01
.8100000+02	.1000000+01			
.2700000+02	.2300000+02	.1000000+01	-.1000000+01	-.1000000+01
.5290000+03	.1000000+01			
.2700000+02	.1700000+02	.1000000+01	-.1000000+01	-.1000000+01
.2890000+03	.1000000+01			
.2200000+02	.1700000+02	.1000000+01	-.1000000+01	-.1000000+01
.2890000+03	.1000000+01			
.1900000+02	.8000000+01	.1000000+01	-.1000000+01	-.1000000+01
.5400000+02	.1000000+01			
.1400000+02	.1200000+02	.1000000+01	-.1000000+01	-.1000000+01
.1440000+03	.1000000+01			
.2100000+02	.1700000+02	.1000000+01	-.1000000+01	-.1000000+01
.2890000+03	.1000000+01			
.2600000+02	.2000000+02	.1000000+01	-.1000000+01	-.1000000+01
.4000000+03	.1000000+01			
.2300000+02	.1800000+02	.1000000+01	-.1000000+01	-.1000000+01
.3240000+03	.1000000+01			
.1200000+02	.1400000+02	.1000000+01	-.1000000+01	-.1000000+01
.1960000+03	.1000000+01			
.1300000+02	.1300000+02	.1000000+01	-.1000000+01	-.1000000+01
.1690000+03	.1000000+01			
.2200000+02	.1700000+02	.1000000+01	-.1000000+01	-.1000000+01
.2890000+03	.1000000+01			
.1900000+02	.1500000+02	.0000000	-.1000000+01	-.1000000+01
.2250000+03	.1000000+01			
.1700000+02	.1800000+02	.0000000	-.1000000+01	-.1000000+01

.3240000+03	.1000000+01			
.3700000+02	.2700000+02	.0000000	-.1000000+01	-.1000000+01
.7290000+03	.1000000+01			
.2100000+02	.1100000+02	.0000000	-.1000000+01	-.1000000+01
.1210000+03	.1000000+01			
.1700000+02	.1300000+02	.0000000	-.1000000+01	-.1000000+01
.1690000+03	.1000000+01			
.1700000+02	.1500000+02	.0000000	-.1000000+01	-.1000000+01
.2250000+03	.1000000+01			
.2600000+02	.1300000+02	.0000000	-.1000000+01	-.1000000+01
.1690000+03	.1000000+01			
.2100000+02	.1000000+02	.0000000	-.1000000+01	-.1000000+01
.1000000+03	.1000000+01			
.3700000+02	.2100000+02	.0000000	-.1000000+01	-.1000000+01
.4410000+03	.1000000+01			
.1100000+02	.1300000+02	.0000000	-.1000000+01	-.1000000+01
.1690000+03	.1000000+01			
.1400000+02	.1000000+02	.0000000	-.1000000+01	-.1000000+01
.1000000+03	.1000000+01			
.1700000+02	.1700000+02	.0000000	-.1000000+01	-.1000000+01
.2890000+03	.1000000+01			
.3000000+02	.2200000+02	.0000000	-.1000000+01	-.1000000+01
.4840000+03	.1000000+01			
.2000000+02	.1300000+02	.1000000+01	.0000000	.1000000+01
.1690000+03	.1000000+01			
.1200000+02	.1100000+02	.1000000+01	.0000000	.1000000+01
.1210000+03	.1000000+01			
.1600000+02	.1500000+02	.1000000+01	.0000000	.1000000+01
.2250000+03	.1000000+01			
.2300000+02	.2200000+02	.1000000+01	.0000000	.1000000+01
.4840000+03	.1000000+01			
.1600000+02	.1300000+02	.1000000+01	.0000000	.1000000+01
.1690000+03	.1000000+01			
.8000000+01	.9000000+01	.1000000+01	.0000000	.1000000+01
.8100000+02	.1000000+01			
.2300000+02	.1800000+02	.1000000+01	.0000000	.1000000+01
.3240000+03	.1000000+01			
.1700000+02	.1100000+02	.1000000+01	.0000000	.1000000+01
.1210000+03	.1000000+01			
.2100000+02	.1200000+02	.1000000+01	.0000000	.1000000+01
.1440000+03	.1000000+01			
.1200000+02	.1600000+02	.1000000+01	.0000000	.1000000+01
.2560000+03	.1000000+01			
.2300000+02	.1100000+02	.1000000+01	.0000000	.1000000+01
.1210000+03	.1000000+01			
.3000000+02	.2100000+02	.1000000+01	.0000000	.1000000+01
.4410000+03	.1000000+01			
.1500000+02	.9000000+01	.1000000+01	.0000000	.1000000+01
.8100000+02	.1000000+01			
.1600000+02	.1200000+02	.1000000+01	.0000000	.1000000+01
.1440000+03	.1000000+01			
.2800000+02	.2500000+02	.0000000	.0000000	.1000000+01
.6250000+03	.1000000+01			
.1800000+02	.1100000+02	.0000000	.0000000	.1000000+01
.1210000+03	.1000000+01			
.2700000+02	.2400000+02	.0000000	.0000000	.1000000+01
.5760000+03	.1000000+01			
.6000000+01	.1400000+02	.0000000	.0000000	.1000000+01

.1960000+03	.1000000+01			
.1200000+02	.1600000+02	.0000000	.0000000	.1000000+01
.2560000+03	.1000000+01			
.1500000+02	.1400000+02	.0000000	.0000000	.1000000+01
.1960000+03	.1000000+01			
.2800000+02	.1800000+02	.0000000	.0000000	.1000000+01
.3240000+03	.1000000+01			
.1900000+02	.8000000+01	.0000000	.0000000	.1000000+01
.6400000+02	.1000000+01			
.1800000+02	.8000000+01	.0000000	.0000000	.1000000+01
.6400000+02	.1000000+01			
.2200000+02	.1400000+02	.0000000	.0000000	.1000000+01
.1960000+03	.1000000+01			
.1500000+02	.1500000+02	.0000000	.0000000	.1000000+01
.2250000+03	.1000000+01			
.1700000+02	.1600000+02	.0000000	.0000000	.1000000+01
.2560000+03	.1000000+01			
.1300000+02	.9000000+01	.0000000	.0000000	.1000000+01
.8100000+02	.1000000+01			
.1400000+02	.1200000+02	.0000000	.0000000	.1000000+01
.1440000+03	.1000000+01			
.3800000+02	.3500000+02	.0000000	.0000000	.1000000+01
.1225000+04	.1000000+01			
.2000000+02	.1500000+02	.0000000	.0000000	.1000000+01
.2250000+03	.1000000+01			
.1600000+02	.1500000+02	.0000000	.0000000	.1000000+01
.2250000+03	.1000000+01			
.3000000+02	.2100000+02	.0000000	.0000000	.1000000+01
.4410000+03	.1000000+01			
.1800000+02	.9000000+01	.0000000	.0000000	.1000000+01
.8100000+02	.1000000+01			
.2200000+02	.2000000+02	.0000000	.0000000	.1000000+01
.4000000+03	.1000000+01			
.9000000+01	.1500000+02	.0000000	.0000000	.1000000+01
.2250000+03	.1000000+01			
.1900000+02	.1100000+02	.0000000	.0000000	.1000000+01
.1210000+03	.1000000+01			
.1100000+02	.2200000+02	.0000000	.0000000	.1000000+01
.4840000+03	.1000000+01			
.3400000+02	.2300000+02	.0000000	.0000000	.1000000+01
.5290000+03	.1000000+01			

HP5 : MATRIX INVERSION PROBLEM

8 8

.6067600+05	.5380000+03	.2895000+04	.1367200+05	.1142000+05
.4017000+04	.4560000+03	.1025000+04	.1075100+05	
.1725940+06	.1077000+04	.9412000+04	.3529000+05	.3195700+05
.1124600+05	.4667000+04	.3959000+04	.6206000+04	
.6586500+05	.4300000+03	.1959000+04	.2323300+05	.1259900+05
.3860000+04	.1018000+04	.2064000+04	.3139000+04	
.9492800+05	.8220000+03	.2369000+04	.3572800+05	.1730100+05
.5373000+04	.7490000+03	.3064000+04	.1547000+05	
.7559300+05	.8090000+03	.3250000+04	.2809800+05	.2001800+05
.8061000+04	.2350000+03	.4090000+03	.1465000+04	
.8305400+05	.1230000+04	.5506000+04	.2774000+05	.2295900+05
.9702000+04	.2390000+03	.5910000+03	.1050000+04	
.1432300+06	.9840000+03	.5282000+04	.4738100+05	.4145100+05
.1513100+05	.2180000+04	.2260000+04	.8142000+04	
.7047800+05	.1040000+04	.1667000+04	.1538400+05	.1191100+05
.5063000+04	.1323000+04	.2333000+04	.6194000+04	

```
HP6  : POLYNOMIAL  APPROXIMATION PROBLEM
    6     2
    .1520000+02     .1000000+01     .0000000
    .1025000+02     .1000000+01     .1000000+01
    .4750000+01     .1000000+01     .2000000+01
    .1000000+00     .1000000+01     .3000000+01
   -.4750000+01     .1000000+01     .4000000+01
   -.1005000+02     .1000000+01     .5000000+01
```

```
HP7  : POLYNOMIAL APPROXIMATION PROBLEM
    7     2
    .1000000+01     .1000000+01     .1000000+01
    .1200000+02     .1000000+01     .2000000+01
    .3000000+01     .1000000+01     .3000000+01
    .4000000+01     .1000000+01     .4000000+01
    .5000000+01     .1000000+01     .5000000+01
    .1200000+02     .1000000+01     .6000000+01
    .7000000+01     .1000000+01     .7000000+01
```

```
HP8 : POLYNOMIAL APPROXIMATION PROBLEM
 201     1
    .0000000          .1000000+01
    .1960000-01       .1000000+01
    .3842000-01       .1000000+01
    .5647000-01       .1000000+01
    .7377000-01       .1000000+01
    .9033000-01       .1000000+01
    .1061800+00       .1000000+01
    .1213100+00       .1000000+01
    .1357600+00       .1000000+01
    .1495400+00       .1000000+01
    .1626600+00       .1000000+01
    .1751300+00       .1000000+01
    .1869800+00       .1000000+01
    .1982200+00       .1000000+01
    .2088700+00       .1000000+01
    .2189300+00       .1000000+01
    .2284200+00       .1000000+01
    .2373700+00       .1000000+01
    .2457700+00       .1000000+01
    .2536600+00       .1000000+01
    .2610300+00       .1000000+01
    .2679200+00       .1000000+01
    .2743200+00       .1000000+01
    .2802600+00       .1000000+01
    .2857400+00       .1000000+01
    .2907900+00       .1000000+01
    .2954100+00       .1000000+01
    .2996100+00       .1000000+01
    .3034200+00       .1000000+01
    .3068400+00       .1000000+01
    .3098800+00       .1000000+01
    .3125600+00       .1000000+01
    .3149000+00       .1000000+01
    .3168900+00       .1000000+01
    .3185600+00       .1000000+01
    .3199100+00       .1000000+01
    .3209600+00       .1000000+01
    .3217100+00       .1000000+01
    .3221900+00       .1000000+01
    .3223900+00       .1000000+01
    .3223300+00       .1000000+01
    .3220200+00       .1000000+01
    .3214700+00       .1000000+01
    .3206900+00       .1000000+01
    .3196900+00       .1000000+01
    .3184800+00       .1000000+01
    .3170600+00       .1000000+01
    .3154500+00       .1000000+01
    .3136600+00       .1000000+01
    .3116900+00       .1000000+01
    .3095600+00       .1000000+01
    .3072700+00       .1000000+01
    .3048200+00       .1000000+01
    .3022300+00       .1000000+01
    .2995100+00       .1000000+01
```

.2966600+00	.1000000+01
.2936800+00	.1000000+01
.2906000+00	.1000000+01
.2874100+00	.1000000+01
.2841100+00	.1000000+01
.2807200+00	.1000000+01
.2772500+00	.1000000+01
.2736900+00	.1000000+01
.2700600+00	.1000000+01
.2663600+00	.1000000+01
.2626000+00	.1000000+01
.2587800+00	.1000000+01
.2549000+00	.1000000+01
.2509800+00	.1000000+01
.2470100+00	.1000000+01
.2430100+00	.1000000+01
.2389700+00	.1000000+01
.2349000+00	.1000000+01
.2308100+00	.1000000+01
.2267000+00	.1000000+01
.2225700+00	.1000000+01
.2184300+00	.1000000+01
.2142800+00	.1000000+01
.2101200+00	.1000000+01
.2059700+00	.1000000+01
.2018100+00	.1000000+01
.1976600+00	.1000000+01
.1935200+00	.1000000+01
.1893800+00	.1000000+01
.1852600+00	.1000000+01
.1811600+00	.1000000+01
.1770800+00	.1000000+01
.1730100+00	.1000000+01
.1689700+00	.1000000+01
.1649600+00	.1000000+01
.1609800+00	.1000000+01
.1570200+00	.1000000+01
.1531000+00	.1000000+01
.1492100+00	.1000000+01
.1453500+00	.1000000+01
.1415400+00	.1000000+01
.1377600+00	.1000000+01
.1340200+00	.1000000+01
.1303200+00	.1000000+01
.1266700+00	.1000000+01
.1230600+00	.1000000+01
.1195000+00	.1000000+01
.1159800+00	.1000000+01
.1125000+00	.1000000+01
.1090800+00	.1000000+01
.1057100+00	.1000000+01
.1023800+00	.1000000+01
.9910000-01	.1000000+01
.9588000-01	.1000000+01
.9271000-01	.1000000+01
.8958000-01	.1000000+01
.8651000-01	.1000000+01
.8350000-01	.1000000+01

.8053000-01	.1000000+01
.7762000-01	.1000000+01
.7476000-01	.1000000+01
.7196000-01	.1000000+01
.6921000-01	.1000000+01
.6651000-01	.1000000+01
.6387000-01	.1000000+01
.6128000-01	.1000000+01
.5874000-01	.1000000+01
.5626000-01	.1000000+01
.5383000-01	.1000000+01
.5145000-01	.1000000+01
.4913000-01	.1000000+01
.4685000-01	.1000000+01
.4463000-01	.1000000+01
.4247000-01	.1000000+01
.4035000-01	.1000000+01
.3829000-01	.1000000+01
.3627000-01	.1000000+01
.3431000-01	.1000000+01
.3240000-01	.1000000+01
.3054000-01	.1000000+01
.2872000-01	.1000000+01
.2696000-01	.1000000+01
.2524000-01	.1000000+01
.2357000-01	.1000000+01
.2195000-01	.1000000+01
.2037000-01	.1000000+01
.1884000-01	.1000000+01
.1735000-01	.1000000+01
.1591000-01	.1000000+01
.1452000-01	.1000000+01
.1316000-01	.1000000+01
.1185000-01	.1000000+01
.1059000-01	.1000000+01
.9360000-02	.1000000+01
.8170000-02	.1000000+01
.7030000-02	.1000000+01
.5920000-02	.1000000+01
.4850000-02	.1000000+01
.3820000-02	.1000000+01
.2830000-02	.1000000+01
.1870000-02	.1000000+01
.9500000-03	.1000000+01
.7000000-04	.1000000+01
-.7800000-03	.1000000+01
-.1600000-02	.1000000+01
-.2380000-02	.1000000+01
-.3130000-02	.1000000+01
-.3850000-02	.1000000+01
-.4530000-02	.1000000+01
-.5190000-02	.1000000+01
-.5820000-02	.1000000+01
-.6420000-02	.1000000+01
-.6980000-02	.1000000+01
-.7530000-02	.1000000+01
-.8040000-02	.1000000+01
-.8530000-02	.1000000+01

-.8990000-02	.1000000+01
-.9430000-02	.1000000+01
-.9840000-02	.1000000+01
-.1023000-01	.1000000+01
-.1059000-01	.1000000+01
-.1094000-01	.1000000+01
-.1126000-01	.1000000+01
-.1155000-01	.1000000+01
-.1183000-01	.1000000+01
-.1209000-01	.1000000+01
-.1233000-01	.1000000+01
-.1255000-01	.1000000+01
-.1275000-01	.1000000+01
-.1293000-01	.1000000+01
-.1310000-01	.1000000+01
-.1325000-01	.1000000+01
-.1338000-01	.1000000+01
-.1350000-01	.1000000+01
-.1360000-01	.1000000+01
-.1369000-01	.1000000+01
-.1376000-01	.1000000+01
-.1382000-01	.1000000+01
-.1387000-01	.1000000+01
-.1390000-01	.1000000+01
-.1392000-01	.1000000+01
-.1393000-01	.1000000+01
-.1393000-01	.1000000+01
-.1392000-01	.1000000+01
-.1389000-01	.1000000+01
-.1386000-01	.1000000+01

```
HP9 : POLYNOMIAL APPROXIMATION PROBLEM
 201     2
   .0000000          .1000000+01       .0000000
   .1960000-01       .1000000+01       .2000000-01
   .3842000-01       .1000000+01       .4000000-01
   .5647000-01       .1000000+01       .6000000-01
   .7377000-01       .1000000+01       .8000000-01
   .9033000-01       .1000000+01       .1000000+00
   .1061800+00       .1000000+01       .1200000+00
   .1213100+00       .1000000+01       .1400000+00
   .1357600+00       .1000000+01       .1600000+00
   .1495400+00       .1000000+01       .1800000+00
   .1626600+00       .1000000+01       .2000000+00
   .1751300+00       .1000000+01       .2200000+00
   .1869800+00       .1000000+01       .2400000+00
   .1982200+00       .1000000+01       .2600000+00
   .2088700+00       .1000000+01       .2800000+00
   .2189300+00       .1000000+01       .3000000+00
   .2284200+00       .1000000+01       .3200000+00
   .2373700+00       .1000000+01       .3400000+00
   .2457700+00       .1000000+01       .3600000+00
   .2536600+00       .1000000+01       .3800000+00
   .2610300+00       .1000000+01       .4000000+00
   .2679200+00       .1000000+01       .4200000+00
   .2743200+00       .1000000+01       .4400000+00
   .2802600+00       .1000000+01       .4600000+00
   .2857400+00       .1000000+01       .4800000+00
   .2907900+00       .1000000+01       .5000000+00
   .2954100+00       .1000000+01       .5200000+00
   .2996100+00       .1000000+01       .5400000+00
   .3034200+00       .1000000+01       .5600000+00
   .3068400+00       .1000000+01       .5800000+00
   .3098800+00       .1000000+01       .6000000+00
   .3125600+00       .1000000+01       .6200000+00
   .3149000+00       .1000000+01       .6400000+00
   .3168900+00       .1000000+01       .6600000+00
   .3185600+00       .1000000+01       .6800000+00
   .3199100+00       .1000000+01       .7000000+00
   .3209600+00       .1000000+01       .7200000+00
   .3217100+00       .1000000+01       .7400000+00
   .3221900+00       .1000000+01       .7600000+00
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   .3223300+00       .1000000+01       .8000000+00
   .3220200+00       .1000000+01       .8200000+00
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-.7530000-02	.1000000+01	.3360000+01
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-.1255000-01	.1000000+01	.3640000+01
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HP10 : POLYNOMIAL APPROXIMATION PROBLEM

201 3

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.7377000-01	.1000000+01	.8000000-01	.6400000-02
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.2802600+00	.1000000+01	.4600000+00	.2116000+00
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-.1275000-01	.1000000+01	.3660000+01	.1339560+02
-.1293000-01	.1000000+01	.3680000+01	.1354240+02
-.1310000-01	.1000000+01	.3700000+01	.1369000+02
-.1325000-01	.1000000+01	.3720000+01	.1383840+02
-.1338000-01	.1000000+01	.3740000+01	.1398760+02
-.1350000-01	.1000000+01	.3760000+01	.1413760+02
-.1360000-01	.1000000+01	.3780000+01	.1428840+02
-.1369000-01	.1000000+01	.3800000+01	.1444000+02
-.1376000-01	.1000000+01	.3820000+01	.1459240+02
-.1382000-01	.1000000+01	.3840000+01	.1474560+02
-.1387000-01	.1000000+01	.3860000+01	.1489960+02
-.1390000-01	.1000000+01	.3880000+01	.1505440+02
-.1392000-01	.1000000+01	.3900000+01	.1521000+02
-.1393000-01	.1000000+01	.3920000+01	.1536640+02
-.1393000-01	.1000000+01	.3940000+01	.1552360+02
-.1392000-01	.1000000+01	.3960000+01	.1568160+02
-.1389000-01	.1000000+01	.3980000+01	.1584040+02
-.1386000-01	.1000000+01	.4000000+01	.1600000+02

```
HP11 : POLYNOMIAL APPROXIMATION PROBLEM
 201     4
   .0000000      .1000000+01   .0000000      .0000000      .0000000
   .1960000-01   .1000000+01   .2000000-01   .4000000-03   .1000000-04
   .3842000-01   .1000000+01   .4000000-01   .1600000-02   .6000000-04
   .5647000-01   .1000000+01   .6000000-01   .3600000-02   .2200000-03
   .7377000-01   .1000000+01   .8000000-01   .6400000-02   .5100000-03
   .9033000-01   .1000000+01   .1000000+00   .1000000-01   .1000000-02
   .1061800+00   .1000000+01   .1200000+00   .1440000-01   .1730000-02
   .1213100+00   .1000000+01   .1400000+00   .1960000-01   .2740000-02
   .1357600+00   .1000000+01   .1600000+00   .2560000-01   .4100000-02
   .1495400+00   .1000000+01   .1800000+00   .3240000-01   .5830000-02
   .1626600+00   .1000000+01   .2000000+00   .4000000-01   .8000000-02
   .1751300+00   .1000000+01   .2200000+00   .4840000-01   .1065000-01
   .1869800+00   .1000000+01   .2400000+00   .5760000-01   .1382000-01
   .1982200+00   .1000000+01   .2600000+00   .6760000-01   .1758000-01
   .2088700+00   .1000000+01   .2800000+00   .7840000-01   .2195000-01
   .2189300+00   .1000000+01   .3000000+00   .9000000-01   .2700000-01
   .2284200+00   .1000000+01   .3200000+00   .1024000+00   .3277000-01
   .2373700+00   .1000000+01   .3400000+00   .1156000+00   .3930000-01
   .2457700+00   .1000000+01   .3600000+00   .1296000+00   .4666000-01
   .2536600+00   .1000000+01   .3800000+00   .1444000+00   .5487000-01
   .2610300+00   .1000000+01   .4000000+00   .1600000+00   .6400000-01
   .2679200+00   .1000000+01   .4200000+00   .1764000+00   .7409000-01
   .2743200+00   .1000000+01   .4400000+00   .1936000+00   .8513000-01
   .2802600+00   .1000000+01   .4600000+00   .2116000+00   .9734000-01
   .2857400+00   .1000000+01   .4800000+00   .2304000+00   .1105900+00
   .2907900+00   .1000000+01   .5000000+00   .2500000+00   .1250000+00
   .2954100+00   .1000000+01   .5200000+00   .2704000+00   .1406100+00
   .2996100+00   .1000000+01   .5400000+00   .2916000+00   .1574600+00
   .3034200+00   .1000000+01   .5600000+00   .3136000+00   .1756200+00
   .3068400+00   .1000000+01   .5800000+00   .3364000+00   .1951100+00
   .3098800+00   .1000000+01   .6000000+00   .3600000+00   .2160000+00
   .3125600+00   .1000000+01   .6200000+00   .3844000+00   .2383300+00
   .3149000+00   .1000000+01   .6400000+00   .4096000+00   .2621400+00
   .3168900+00   .1000000+01   .6600000+00   .4356000+00   .2875000+00
   .3185600+00   .1000000+01   .6800000+00   .4624000+00   .3144300+00
   .3199100+00   .1000000+01   .7000000+00   .4900000+00   .3430000+00
   .3209600+00   .1000000+01   .7200000+00   .5184000+00   .3732500+00
   .3217100+00   .1000000+01   .7400000+00   .5476000+00   .4052200+00
   .3221900+00   .1000000+01   .7600000+00   .5776000+00   .4389800+00
   .3223900+00   .1000000+01   .7800000+00   .6084000+00   .4745500+00
   .3223300+00   .1000000+01   .8000000+00   .6400000+00   .5120000+00
   .3220200+00   .1000000+01   .8200000+00   .6724000+00   .5513700+00
   .3214700+00   .1000000+01   .8400000+00   .7056000+00   .5927000+00
   .3206900+00   .1000000+01   .8600000+00   .7396000+00   .6360600+00
   .3196900+00   .1000000+01   .8800000+00   .7744000+00   .6814700+00
   .3184800+00   .1000000+01   .9000000+00   .8100000+00   .7290000+00
   .3170600+00   .1000000+01   .9200000+00   .8464000+00   .7786900+00
   .3154500+00   .1000000+01   .9400000+00   .8836000+00   .8305800+00
   .3136600+00   .1000000+01   .9600000+00   .9216000+00   .8847400+00
   .3116900+00   .1000000+01   .9800000+00   .9604000+00   .9411900+00
   .3095600+00   .1000000+01   .1000000+01   .1000000+01   .1000000+01
   .3072700+00   .1000000+01   .1020000+01   .1040400+01   .1061210+01
   .3048200+00   .1000000+01   .1040000+01   .1081600+01   .1124860+01
   .3022300+00   .1000000+01   .1060000+01   .1123600+01   .1191020+01
   .2995100+00   .1000000+01   .1080000+01   .1166400+01   .1259710+01
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.2966600+00	.1000000+01	.1100000+01	.1210000+01	.1331000+01
.2936800+00	.1000000+01	.1120000+01	.1254400+01	.1404930+01
.2906000+00	.1000000+01	.1140000+01	.1299600+01	.1481540+01
.2874100+00	.1000000+01	.1160000+01	.1345600+01	.1560900+01
.2841100+00	.1000000+01	.1180000+01	.1392400+01	.1643030+01
.2807200+00	.1000000+01	.1200000+01	.1440000+01	.1728000+01
.2772500+00	.1000000+01	.1220000+01	.1488400+01	.1815850+01
.2736900+00	.1000000+01	.1240000+01	.1537600+01	.1906620+01
.2700600+00	.1000000+01	.1260000+01	.1587600+01	.2000380+01
.2663600+00	.1000000+01	.1280000+01	.1638400+01	.2097150+01
.2626000+00	.1000000+01	.1300000+01	.1690000+01	.2197000+01
.2587800+00	.1000000+01	.1320000+01	.1742400+01	.2299970+01
.2549000+00	.1000000+01	.1340000+01	.1795600+01	.2406100+01
.2509300+00	.1000000+01	.1360000+01	.1849600+01	.2515440+01
.2470100+00	.1000000+01	.1380000+01	.1904400+01	.2628070+01
.2430100+00	.1000000+01	.1400000+01	.1960000+01	.2744000+01
.2389700+00	.1000000+01	.1420000+01	.2016400+01	.2863290+01
.2349000+00	.1000000+01	.1440000+01	.2073600+01	.2985980+01
.2308100+00	.1000000+01	.1460000+01	.2131600+01	.3112140+01
.2267000+00	.1000000+01	.1480000+01	.2190400+01	.3241790+01
.2225700+00	.1000000+01	.1500000+01	.2250000+01	.3375000+01
.2184300+00	.1000000+01	.1520000+01	.2310400+01	.3511810+01
.2142800+00	.1000000+01	.1540000+01	.2371600+01	.3652250+01
.2101200+00	.1000000+01	.1560000+01	.2433600+01	.3796420+01
.2059700+00	.1000000+01	.1580000+01	.2496400+01	.3944310+01
.2018100+00	.1000000+01	.1600000+01	.2560000+01	.4096000+01
.1976600+00	.1000000+01	.1620000+01	.2624400+01	.4251530+01
.1935200+00	.1000000+01	.1640000+01	.2689600+01	.4410940+01
.1893800+00	.1000000+01	.1660000+01	.2755600+01	.4574300+01
.1852600+00	.1000000+01	.1680000+01	.2822400+01	.4741630+01
.1811600+00	.1000000+01	.1700000+01	.2890000+01	.4913000+01
.1770800+00	.1000000+01	.1720000+01	.2958400+01	.5088450+01
.1730100+00	.1000000+01	.1740000+01	.3027600+01	.5268020+01
.1689700+00	.1000000+01	.1760000+01	.3097600+01	.5451780+01
.1649600+00	.1000000+01	.1780000+01	.3168400+01	.5639750+01
.1609800+00	.1000000+01	.1800000+01	.3240000+01	.5832000+01
.1570200+00	.1000000+01	.1820000+01	.3312400+01	.6028570+01
.1531000+00	.1000000+01	.1840000+01	.3385600+01	.6229500+01
.1492100+00	.1000000+01	.1860000+01	.3459600+01	.6434860+01
.1453500+00	.1000000+01	.1880000+01	.3534400+01	.6644670+01
.1415400+00	.1000000+01	.1900000+01	.3610000+01	.6859000+01
.1377600+00	.1000000+01	.1920000+01	.3686400+01	.7077890+01
.1340200+00	.1000000+01	.1940000+01	.3763600+01	.7301380+01
.1303200+00	.1000000+01	.1960000+01	.3841600+01	.7529540+01
.1266700+00	.1000000+01	.1980000+01	.3920400+01	.7762390+01
.1230600+00	.1000000+01	.2000000+01	.4000000+01	.8000000+01
.1195000+00	.1000000+01	.2020000+01	.4080400+01	.8242410+01
.1159800+00	.1000000+01	.2040000+01	.4161600+01	.8489660+01
.1125000+00	.1000000+01	.2060000+01	.4243600+01	.8741820+01
.1090800+00	.1000000+01	.2080000+01	.4326400+01	.8998910+01
.1057100+00	.1000000+01	.2100000+01	.4410000+01	.9261000+01
.1023800+00	.1000000+01	.2120000+01	.4494400+01	.9528130+01
.9910000-01	.1000000+01	.2140000+01	.4579600+01	.9800340+01
.9588000-01	.1000000+01	.2160000+01	.4665600+01	.1007770+02
.9271000-01	.1000000+01	.2180000+01	.4752400+01	.1036023+02
.8958000-01	.1000000+01	.2200000+01	.4840000+01	.1064800+02
.8651000-01	.1000000+01	.2220000+01	.4928400+01	.1094105+02
.8350000-01	.1000000+01	.2240000+01	.5017600+01	.1123942+02

.8053000-01	.1000000+01	.2260000+01	.5107600+01	.1143138+02
.7762000-01	.1000000+01	.2280000+01	.5198400+01	.1185235+02
.7475000-01	.1000000+01	.2300000+01	.5290000+01	.1216700+02
.7196000-01	.1000000+01	.2320000+01	.5382400+01	.1248717+02
.6921000-01	.1000000+01	.2340000+01	.5475600+01	.1281290+02
.6651000-01	.1000000+01	.2360000+01	.5569600+01	.1314426+02
.6387000-01	.1000000+01	.2380000+01	.5664400+01	.1348127+02
.6128000-01	.1000000+01	.2400000+01	.5760000+01	.1382400+02
.5874000-01	.1000000+01	.2420000+01	.5856400+01	.1417249+02
.5626000-01	.1000000+01	.2440000+01	.5953600+01	.1452673+02
.5383000-01	.1000000+01	.2460000+01	.6051600+01	.1488694+02
.5145000-01	.1000000+01	.2480000+01	.6150400+01	.1525320+02
.4913000-01	.1000000+01	.2500000+01	.6250000+01	.1562500+02
.4685000-01	.1000000+01	.2520000+01	.6350400+01	.1600301+02
.4463000-01	.1000000+01	.2540000+01	.6451600+01	.1638706+02
.4247000-01	.1000000+01	.2560000+01	.6553600+01	.1677722+02
.4035000-01	.1000000+01	.2580000+01	.6656400+01	.1717351+02
.3829000-01	.1000000+01	.2600000+01	.6760000+01	.1757600+02
.3627000-01	.1000000+01	.2620000+01	.6864400+01	.1798473+02
.3431000-01	.1000000+01	.2640000+01	.6969600+01	.1839974+02
.3240000-01	.1000000+01	.2660000+01	.7075600+01	.1882110+02
.3054000-01	.1000000+01	.2680000+01	.7182400+01	.1924883+02
.2872000-01	.1000000+01	.2700000+01	.7290000+01	.1968300+02
.2696000-01	.1000000+01	.2720000+01	.7398400+01	.2012365+02
.2524000-01	.1000000+01	.2740000+01	.7507600+01	.2057082+02
.2357000-01	.1000000+01	.2760000+01	.7617600+01	.2102458+02
.2195000-01	.1000000+01	.2780000+01	.7728400+01	.2148495+02
.2037000-01	.1000000+01	.2800000+01	.7840000+01	.2195200+02
.1884000-01	.1000000+01	.2820000+01	.7952400+01	.2242577+02
.1735000-01	.1000000+01	.2840000+01	.8065600+01	.2290630+02
.1591000-01	.1000000+01	.2860000+01	.8179600+01	.2339366+02
.1452000-01	.1000000+01	.2880000+01	.8294400+01	.2388787+02
.1316000-01	.1000000+01	.2900000+01	.8410000+01	.2438900+02
.1185000-01	.1000000+01	.2920000+01	.8526400+01	.2489709+02
.1059000-01	.1000000+01	.2940000+01	.8643600+01	.2541218+02
.9360000-02	.1000000+01	.2960000+01	.8761600+01	.2593434+02
.8170000-02	.1000000+01	.2980000+01	.8880400+01	.2646359+02
.7030000-02	.1000000+01	.3000000+01	.9000000+01	.2700000+02
.5920000-02	.1000000+01	.3020000+01	.9120400+01	.2754361+02
.4850000-02	.1000000+01	.3040000+01	.9241600+01	.2809444+02
.3820000-02	.1000000+01	.3060000+01	.9363600+01	.2865262+02
.2830000-02	.1000000+01	.3080000+01	.9486400+01	.2921811+02
.1870000-02	.1000000+01	.3100000+01	.9610000+01	.2979100+02
.9500000-03	.1000000+01	.3120000+01	.9734400+01	.3037133+02
.7000000-04	.1000000+01	.3140000+01	.9859600+01	.3096014+02
-.7800000-03	.1000000+01	.3160000+01	.9985600+01	.3155450+02
-.1600000-02	.1000000+01	.3180000+01	.1011240+02	.3215743+02
-.2380000-02	.1000000+01	.3200000+01	.1024000+02	.3276800+02
-.3130000-02	.1000000+01	.3220000+01	.1036840+02	.3338625+02
-.3850000-02	.1000000+01	.3240000+01	.1049760+02	.3401222+02
-.4530000-02	.1000000+01	.3260000+01	.1062760+02	.3464598+02
-.5190000-02	.1000000+01	.3280000+01	.1075840+02	.3528755+02
-.5820000-02	.1000000+01	.3300000+01	.1089000+02	.3593700+02
-.6420000-02	.1000000+01	.3320000+01	.1102240+02	.3659437+02
-.6980000-02	.1000000+01	.3340000+01	.1115560+02	.3725970+02
-.7530000-02	.1000000+01	.3360000+01	.1128960+02	.3793305+02
-.8040000-02	.1000000+01	.3380000+01	.1142440+02	.3861447+02
-.8530000-02	.1000000+01	.3400000+01	.1156000+02	.3930404+02

-.9990000-02	.1000000+01	.3420000+01	.1169640+02	.4000160+02
-.9930000-02	.1000000+01	.3440000+01	.1183360+02	.4073768+02
-.9840000-02	.1000000+01	.3460000+01	.1197160+02	.4142174+02
-.1023000-01	.1000000+01	.3480000+01	.1211040+02	.4214419+02
-.1059000-01	.1000000+01	.3500000+01	.1225000+02	.4287500+02
-.1094000-01	.1000000+01	.3520000+01	.1239040+02	.4361421+02
-.1126000-01	.1000000+01	.3540000+01	.1253160+02	.4436186+02
-.1155000-01	.1000000+01	.3560000+01	.1267360+02	.4511802+02
-.1183000-01	.1000000+01	.3580000+01	.1281640+02	.4588271+02
-.1209000-01	.1000000+01	.3600000+01	.1296000+02	.4665600+02
-.1233000-01	.1000000+01	.3620000+01	.1310440+02	.4743793+02
-.1255000-01	.1000000+01	.3640000+01	.1324960+02	.4822854+02
-.1275000-01	.1000000+01	.3660000+01	.1339560+02	.4902790+02
-.1293000-01	.1000000+01	.3680000+01	.1354240+02	.4983603+02
-.1310000-01	.1000000+01	.3700000+01	.1369000+02	.5065300+02
-.1325000-01	.1000000+01	.3720000+01	.1383840+02	.5147885+02
-.1338000-01	.1000000+01	.3740000+01	.1398760+02	.5231362+02
-.1350000-01	.1000000+01	.3760000+01	.1413760+02	.5315733+02
-.1360000-01	.1000000+01	.3780000+01	.1428840+02	.5401015+02
-.1369000-01	.1000000+01	.3800000+01	.1444000+02	.5487200+02
-.1376000-01	.1000000+01	.3820000+01	.1459240+02	.5574297+02
-.1382000-01	.1000000+01	.3840000+01	.1474560+02	.5662319+02
-.1387000-01	.1000000+01	.3860000+01	.1489960+02	.5751246+02
-.1390000-01	.1000000+01	.3880000+01	.1505440+02	.5841107+02
-.1392000-01	.1000000+01	.3900000+01	.1521000+02	.5931900+02
-.1393000-01	.1000000+01	.3920000+01	.1536640+02	.6023629+02
-.1393000-01	.1000000+01	.3940000+01	.1552360+02	.6116299+02
-.1392000-01	.1000000+01	.3960000+01	.1568160+02	.6209914+02
-.1389000-01	.1000000+01	.3980000+01	.1584040+02	.6304479+02
-.1386000-01	.1000000+01	.4000000+01	.1600000+02	.6400000+02

```
HP12 : POLYNOMIAL APPROXIMATION PROBLEM
 201     5
   .0000000        .1000000+01     .0000000        .0000000        .0000000
   .0000000
   .1960000-01     .1000000+01     .2000000-01     .4000000-03     .1000000-04
   .0000000
   .3842000-01     .1000000+01     .4000000-01     .1600000-02     .6000000-04
   .0000000
   .5647000-01     .1000000+01     .6000000-01     .3600000-02     .2200000-03
   .1000000-04
   .7377000-01     .1000000+01     .8000000-01     .6400000-02     .5100000-03
   .4000000-04
   .9033000-01     .1000000+01     .1000000+00     .1000000-01     .1000000-02
   .1000000-03
   .1061800+00     .1000000+01     .1200000+00     .1440000-01     .1730000-02
   .2100000-03
   .1213100+00     .1000000+01     .1400000+00     .1960000-01     .2740000-02
   .3800000-03
   .1357600+00     .1000000+01     .1600000+00     .2560000-01     .4100000-02
   .6600000-03
   .1495400+00     .1000000+01     .1800000+00     .3240000-01     .5830000-02
   .1050000-02
   .1626600+00     .1000000+01     .2000000+00     .4000000-01     .8000000-02
   .1600000-02
   .1751300+00     .1000000+01     .2200000+00     .4840000-01     .1065000-01
   .2340000-02
   .1869800+00     .1000000+01     .2400000+00     .5760000-01     .1382000-01
   .3320000-02
   .1982200+00     .1000000+01     .2600000+00     .6760000-01     .1758000-01
   .4570000-02
   .2088700+00     .1000000+01     .2800000+00     .7840000-01     .2195000-01
   .6150000-02
   .2189300+00     .1000000+01     .3000000+00     .9000000-01     .2700000-01
   .8100000-02
   .2284200+00     .1000000+01     .3200000+00     .1024000+00     .3277000-01
   .1049000-01
   .2373700+00     .1000000+01     .3400000+00     .1156000+00     .3930000-01
   .1336000-01
   .2457700+00     .1000000+01     .3600000+00     .1296000+00     .4666000-01
   .1680000-01
   .2536600+00     .1000000+01     .3800000+00     .1444000+00     .5487000-01
   .2085000-01
   .2610300+00     .1000000+01     .4000000+00     .1600000+00     .6400000-01
   .2560000-01
   .2679200+00     .1000000+01     .4200000+00     .1764000+00     .7409000-01
   .3112000-01
   .2743200+00     .1000000+01     .4400000+00     .1936000+00     .8518000-01
   .3748000-01
   .2802600+00     .1000000+01     .4600000+00     .2116000+00     .9734000-01
   .4477000-01
   .2857400+00     .1000000+01     .4800000+00     .2304000+00     .1105900+00
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   .6250000-01
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.1131600+00				
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.1296000+00				
.3125600+00	.1000000+01	.6200000+00	.3844000+00	.2383300+00
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.3149000+00	.1000000+01	.6400000+00	.4096000+00	.2621400+00
.1677700+00				
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.1897500+00				
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.2138100+00				
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.3336200+00				
.3223900+00	.1000000+01	.7800000+00	.6084000+00	.4745500+00
.3701500+00				
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.4096000+00				
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.2995100+00	.1000000+01	.1080000+01	.1166400+01	.1259710+01
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-.1126000-01	.1000000+01	.3540000+01	.1253160+02	.4436186+02
.1570410+03	.5559251+03			
-.1155000-01	.1000000+01	.3560000+01	.1267360+02	.4511802+02
.1606201+03	.5718077+03			
-.1183000-01	.1000000+01	.3580000+01	.1281640+02	.4588271+02
.1642601+03	.5880512+03			
-.1209000-01	.1000000+01	.3600000+01	.1296000+02	.4665600+02
.1679616+03	.6046618+03			
-.1233000-01	.1000000+01	.3620000+01	.1310440+02	.4743793+02
.1717253+03	.6216456+03			
-.1255000-01	.1000000+01	.3640000+01	.1324960+02	.4822854+02
.1755519+03	.6390089+03			
-.1275000-01	.1000000+01	.3660000+01	.1339560+02	.4902790+02
.1794421+03	.6567581+03			
-.1293000-01	.1000000+01	.3680000+01	.1354240+02	.4983603+02
.1833966+03	.6748995+03			
-.1310000-01	.1000000+01	.3700000+01	.1369000+02	.5065300+02
.1874161+03	.6934396+03			
-.1325000-01	.1000000+01	.3720000+01	.1383840+02	.5147885+02
.1915013+03	.7123849+03			
-.1338000-01	.1000000+01	.3740000+01	.1398760+02	.5231362+02
.1956530+03	.7317421+03			
-.1350000-01	.1000000+01	.3760000+01	.1413760+02	.5315738+02
.1998717+03	.7515177+03			
-.1360000-01	.1000000+01	.3780000+01	.1428840+02	.5401015+02
.2041584+03	.7717187+03			
-.1369000-01	.1000000+01	.3800000+01	.1444000+02	.5487200+02
.2085136+03	.7923517+03			
-.1376000-01	.1000000+01	.3820000+01	.1459240+02	.5574297+02
.2129381+03	.8134237+03			
-.1382000-01	.1000000+01	.3840000+01	.1474560+02	.5662310+02
.2174327+03	.8349417+03			
-.1387000-01	.1000000+01	.3860000+01	.1489960+02	.5751240+02
.2219981+03	.8569126+03			
-.1390000-01	.1000000+01	.3880000+01	.1505440+02	.5841107+02
.2266350+03	.8793437+03			
-.1392000-01	.1000000+01	.3900000+01	.1521000+02	.5931900+02
.2313441+03	.9022420+03			
-.1393000-01	.1000000+01	.3920000+01	.1536640+02	.6023629+02
.2361262+03	.9256149+03			
-.1393000-01	.1000000+01	.3940000+01	.1552360+02	.6116295+02
.2409822+03	.9494697+03			
-.1392000-01	.1000000+01	.3960000+01	.1568160+02	.6209914+02
.2459126+03	.9738138+03			
-.1389000-01	.1000000+01	.3980000+01	.1584040+02	.6304479+02
.2509183+03	.9986547+03			
-.1386000-01	.1000000+01	.4000000+01	.1600000+02	.6400000+02
.2560000+03	.1024000+04			

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HP14 : POLYNOMIAL APPROXIMATION PROBLEM
 201     7
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    .0000000        .0000000        .0000000
    .1960000-01     .1000000+01     .2000000-01     .4000000-03     .1000000-04
    .0000000        .0000000        .0000000
    .3842000-01     .1000000+01     .4000000-01     .1600000-02     .6000000-04
    .0000000        .0000000        .0000000
    .5647000-01     .1000000+01     .6000000-01     .3600000-02     .2200000-03
    .1000000-04     .0000000        .0000000
    .7377000-01     .1000000+01     .8000000-01     .6400000-02     .5100000-03
    .4000000-04     .0000000        .0000000
    .9033000-01     .1000000+01     .1000000+00     .1000000-01     .1000000-02
    .1000000-03     .1000000-04     .0000000
    .1061800+00     .1000000+01     .1200000+00     .1440000-01     .1730000-02
    .2100000-03     .2000000-04     .0000000
    .1213100+00     .1000000+01     .1400000+00     .1960000-01     .2740000-02
    .3800000-03     .5000000-04     .1000000-04
    .1357600+00     .1000000+01     .1600000+00     .2560000-01     .4100000-02
    .6600000-03     .1000000-03     .2000000-04
    .1495400+00     .1000000+01     .1800000+00     .3240000-01     .5830000-02
    .1050000-02     .1900000-03     .3000000-04
    .1626600+00     .1000000+01     .2000000+00     .4000000-01     .8000000-02
    .1600000-02     .3200000-03     .6000000-04
    .1751300+00     .1000000+01     .2200000+00     .4840000-01     .1065000-01
    .2340000-02     .5200000-03     .1100000-03
    .1869800+00     .1000000+01     .2400000+00     .5760000-01     .1382000-01
    .3320000-02     .8000000-03     .1900000-03
    .1982200+00     .1000000+01     .2600000+00     .6760000-01     .1758000-01
    .4570000-02     .1190000-02     .3100000-03
    .2088700+00     .1000000+01     .2800000+00     .7840000-01     .2195000-01
    .6150000-02     .1720000-02     .4800000-03
    .2189300+00     .1000000+01     .3000000+00     .9000000-01     .2700000-01
    .8100000-02     .2430000-02     .7300000-03
    .2284200+00     .1000000+01     .3200000+00     .1024000+00     .3277000-01
    .1049000-01     .3360000-02     .1070000-02
    .2373700+00     .1000000+01     .3400000+00     .1156000+00     .3930000-01
    .1336000-01     .4540000-02     .1540000-02
    .2457700+00     .1000000+01     .3600000+00     .1296000+00     .4666000-01
    .1680000-01     .6050000-02     .2180000-02
    .2536600+00     .1000000+01     .3800000+00     .1444000+00     .5487000-01
    .2085000-01     .7920000-02     .3010000-02
    .2610300+00     .1000000+01     .4000000+00     .1600000+00     .6400000-01
    .2560000-01     .1024000-01     .4100000-02
    .2679200+00     .1000000+01     .4200000+00     .1764000+00     .7409000-01
    .3112000-01     .1307000-01     .5490000-02
    .2743200+00     .1000000+01     .4400000+00     .1936000+00     .8518000-01
    .3748000-01     .1649000-01     .7260000-02
    .2802600+00     .1000000+01     .4600000+00     .2116000+00     .9734000-01
    .4477000-01     .2060000-01     .9470000-02
    .2857400+00     .1000000+01     .4800000+00     .2304000+00     .1105900+00
    .5308000-01     .2548000-01     .1223000-01
    .2907900+00     .1000000+01     .5000000+00     .2500000+00     .1250000+00
    .6250000-01     .3125000-01     .1563000-01
    .2954100+00     .1000000+01     .5200000+00     .2704000+00     .1406100+00
    .7312000-01     .3802000-01     .1977000-01
    .2996100+00     .1000000+01     .5400000+00     .2916000+00     .1574600+00
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.8503000-01	.4592000-01	.2479000-01		
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.3068400+00	.1000000+01	.5810000+00	.3364000+00	.1951100+00
.1131500+00	.6564000-01	.3807000-01		
.3098800+00	.1000000+01	.6000000+00	.3600000+00	.2160000+00
.1296000+00	.7776000-01	.4666000-01		
.3125600+00	.1000000+01	.6200000+00	.3844000+00	.2383300+00
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.3149000+00	.1000000+01	.6400000+00	.4096000+00	.2621400+00
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.2138100+00	.1453900+00	.9887000-01		
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.3217100+00	.1000000+01	.7400000+00	.5476000+00	.4052200+00
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.3221900+00	.1000000+01	.7600000+00	.5776000+00	.4389800+00
.3336200+00	.2535500+00	.1927000+00		
.3223900+00	.1000000+01	.7800000+00	.6084000+00	.4745500+00
.3701500+00	.2887200+00	.2252000+00		
.3223300+00	.1000000+01	.8000000+00	.6400000+00	.5120000+00
.4096000+00	.3276800+00	.2621400+00		
.3220200+00	.1000000+01	.8200000+00	.6724000+00	.5513700+00
.4521200+00	.3707400+00	.3040100+00		
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.4978700+00	.4182100+00	.3513000+00		
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.3170600+00	.1000000+01	.9200000+00	.8464000+00	.7786900+00
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.1976500+00	.1000000+01	.1620000+01	.2624400+01	.4251528+01
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.7965940+01	.1338273+02	.2248307+02		
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.1358955+02	.2609193+02	.5009650+02		
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.1600000+02	.3200000+02	.6400000+02		
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.1664966+02	.3363232+02	.6793729+02		
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.1800814+02	.3709677+02	.7641935+02		
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.1944810+02	.4084101+02	.8572612+02		
.1023300+00	.1000000+01	.2120000+01	.4494400+01	.9528130+01
.2019963+02	.4282322+02	.9073322+02		
.9910000-01	.1000000+01	.2140000+01	.4579600+01	.9800340+01
.2097274+02	.4488186+02	.9604674+02		
.9583000-01	.1000000+01	.2160000+01	.4665600+01	.1007770+02
.2176782+02	.4701850+02	.1015600+03		
.9271000-01	.1000000+01	.2180000+01	.4752400+01	.1036023+02
.2258531+02	.4923397+02	.1075344+03		
.8958000-01	.1000000+01	.2200000+01	.4840000+01	.1064800+02
.2342560+02	.5153632+02	.1133799+03		
.8651000-01	.1000000+01	.2220000+01	.4928400+01	.1094105+02
.2428913+02	.5392186+02	.1197065+03		
.8350000-01	.1000000+01	.2240000+01	.5017600+01	.1123942+02
.2517631+02	.5639493+02	.1263246+03		
.8053000-01	.1000000+01	.2260000+01	.5107600+01	.1154318+02
.2608758+02	.5895793+02	.1332449+03		
.7762000-01	.1000000+01	.2280000+01	.5198400+01	.1185235+02

.2702336+02	.6161327+02	.1404783+03		
.7476000-01	.1000000+01	.2300000+01	.5290000+01	.1216700+02
.2798410+02	.6436343+02	.1480359+03		
.7196000-01	.1000000+01	.2320000+01	.5382400+01	.1248717+02
.2897023+02	.6721093+02	.1559294+03		
.6921000-01	.1000000+01	.2340000+01	.5475600+01	.1281290+02
.2998220+02	.7015834+02	.1641705+03		
.6651000-01	.1000000+01	.2360000+01	.5569600+01	.1314426+02
.3102044+02	.7320825+02	.1727715+03		
.6337000-01	.1000000+01	.2380000+01	.5664400+01	.1348127+02
.3208543+02	.7635332+02	.1817447+03		
.6128000-01	.1000000+01	.2400000+01	.5760000+01	.1382400+02
.3317760+02	.7962624+02	.1911030+03		
.5874000-01	.1000000+01	.2420000+01	.5856400+01	.1417249+02
.3429742+02	.8299976+02	.2008594+03		
.5626000-01	.1000000+01	.2440000+01	.5953600+01	.1452673+02
.3544535+02	.8648666+02	.2110275+03		
.5383000-01	.1000000+01	.2460000+01	.6051600+01	.1488694+02
.3662186+02	.9008978+02	.2216209+03		
.5145000-01	.1000000+01	.2480000+01	.6150400+01	.1525249+02
.3782742+02	.9381200+02	.2326538+03		
.4913000-01	.1000000+01	.2500000+01	.6250000+01	.1562500+02
.3906250+02	.9765625+02	.2441406+03		
.4685000-01	.1000000+01	.2520000+01	.6350400+01	.1600301+02
.4032758+02	.1016265+03	.2560953+03		
.4463000-01	.1000000+01	.2540000+01	.6451600+01	.1638706+02
.4162314+02	.1057228+03	.2685359+03		
.4247000-01	.1000000+01	.2560000+01	.6553600+01	.1677722+02
.4294967+02	.1099512+03	.2814750+03		
.4035000-01	.1000000+01	.2580000+01	.6656400+01	.1717361+02
.4430766+02	.1143138+03	.2949295+03		
.3829000-01	.1000000+01	.2600000+01	.6760000+01	.1757600+02
.4569760+02	.1188138+03	.3089158+03		
.3627000-01	.1000000+01	.2620000+01	.6864400+01	.1798473+02
.4711999+02	.1234544+03	.3234504+03		
.3431000-01	.1000000+01	.2640000+01	.6969600+01	.1839974+02
.4857532+02	.1282339+03	.3385506+03		
.3240000-01	.1000000+01	.2660000+01	.7075600+01	.1882110+02
.5006412+02	.1331705+03	.3542337+03		
.3054000-01	.1000000+01	.2680000+01	.7182400+01	.1924903+02
.5158687+02	.1382523+03	.3705175+03		
.2872000-01	.1000000+01	.2700000+01	.7290000+01	.1968300+02
.5314410+02	.1434891+03	.3874205+03		
.2696000-01	.1000000+01	.2720000+01	.7398400+01	.2012365+02
.5473632+02	.1488828+03	.4049612+03		
.2524000-01	.1000000+01	.2740000+01	.7507600+01	.2057062+02
.5636406+02	.1544375+03	.4231588+03		
.2357000-01	.1000000+01	.2760000+01	.7617600+01	.2102453+02
.5802783+02	.1601568+03	.4420328+03		
.2195000-01	.1000000+01	.2780000+01	.7728400+01	.2148496+02
.5972817+02	.1660443+03	.4616032+03		
.2037000-01	.1000000+01	.2800000+01	.7840000+01	.2195200+02
.6146560+02	.1721037+03	.4818903+03		
.1884000-01	.1000000+01	.2820000+01	.7952400+01	.2242577+02
.6324067+02	.1782387+03	.5029151+03		
.1735000-01	.1000000+01	.2840000+01	.8065600+01	.2290630+02
.6505390+02	.1847531+03	.5246988+03		
.1591000-01	.1000000+01	.2860000+01	.8179600+01	.2339386+02

.6690586+02	.1913507+03	.5472631+03		
.1452000-01	.1000000+01	.2880000+01	.3294400+01	.2388787+02
.6879707+02	.1981356+03	.5706304+03		
.1316000-01	.1000000+01	.2900000+01	.3410000+01	.2438900+02
.7072810+02	.2051115+03	.5948233+03		
.1185000-01	.1000000+01	.2920000+01	.8526400+01	.2489709+02
.7269550+02	.2122325+03	.6198650+03		
.1059000-01	.1000000+01	.2940000+01	.8643600+01	.2541218+02
.7471182+02	.2196528+03	.6457791+03		
.9360000-02	.1000000+01	.2960000+01	.8761600+01	.2593434+02
.7676563+02	.2272263+03	.6725898+03		
.8170000-02	.1000000+01	.2980000+01	.8880400+01	.2646359+02
.7886150+02	.2350073+03	.7003217+03		
.7030000-02	.1000000+01	.3000000+01	.9000000+01	.2700000+02
.8100000+02	.2430000+03	.7290000+03		
.5920000-02	.1000000+01	.3020000+01	.9120400+01	.2754361+02
.8318170+02	.2512037+03	.7586504+03		
.4850000-02	.1000000+01	.3040000+01	.9241600+01	.2809446+02
.8540717+02	.2596378+03	.7892989+03		
.3820000-02	.1000000+01	.3060000+01	.9363600+01	.2865262+02
.8767701+02	.2682916+03	.8209724+03		
.2830000-02	.1000000+01	.3080000+01	.9486400+01	.2921811+02
.8999179+02	.2771747+03	.8536981+03		
.1870000-02	.1000000+01	.3100000+01	.9610000+01	.2979100+02
.9235210+02	.2862915+03	.8875037+03		
.9500000-03	.1000000+01	.3120000+01	.9734400+01	.3037133+02
.9475854+02	.2956467+03	.9224176+03		
.7000000-04	.1000000+01	.3140000+01	.9859600+01	.3096914+02
.9721171+02	.3052448+03	.9584686+03		
-.7800000-03	.1000000+01	.3160000+01	.9985600+01	.3155450+02
.9971221+02	.3150906+03	.9956862+03		
-.1600000-02	.1000000+01	.3180000+01	.1011240+02	.3215743+02
.1022606+03	.3251888+03	.1034100+04		
-.2380000-02	.1000000+01	.3200000+01	.1024000+02	.3276800+02
.1048576+03	.3355443+03	.1073742+04		
-.3130000-02	.1000000+01	.3220000+01	.1036840+02	.3338625+02
.1075037+03	.3461620+03	.1114642+04		
-.3850000-02	.1000000+01	.3240000+01	.1049760+02	.3401222+02
.1101996+03	.3570467+03	.1156831+04		
-.4530000-02	.1000000+01	.3260000+01	.1062760+02	.3464598+02
.1129459+03	.3682036+03	.1200344+04		
-.5190000-02	.1000000+01	.3280000+01	.1075840+02	.3528755+02
.1157432+03	.3796375+03	.1245211+04		
-.5820000-02	.1000000+01	.3300000+01	.1089000+02	.3593700+02
.1185921+03	.3913539+03	.1291468+04		
-.6420000-02	.1000000+01	.3320000+01	.1102240+02	.3659437+02
.1214933+03	.4033578+03	.1339148+04		
-.6980000-02	.1000000+01	.3340000+01	.1115560+02	.3725970+02
.1244474+03	.4156544+03	.1388286+04		
-.7530000-02	.1000000+01	.3360000+01	.1128960+02	.3793306+02
.1274551+03	.4282490+03	.1438917+04		
-.8040000-02	.1000000+01	.3380000+01	.1142440+02	.3861447+02
.1305169+03	.4411472+03	.1491077+04		
-.8530000-02	.1000000+01	.3400000+01	.1156000+02	.3930400+02
.1336336+03	.4543542+03	.1544804+04		
-.8990000-02	.1000000+01	.3420000+01	.1169640+02	.4000169+02
.1368058+03	.4678758+03	.1600135+04		
-.9430000-02	.1000000+01	.3440000+01	.1182360+02	.4070758+02

.1400341+03	.4817173+03	.1657107+04		
-.9840000-02	.1000000+01	.3460000+01	.1197160+02	.4142174+02
.1433192+03	.4958845+03	.1715760+04		
-.1023000-01	.1000000+01	.3480000+01	.1211040+02	.4214419+02
.1466618+03	.5103330+03	.1776133+04		
-.1059000-01	.1000000+01	.3500000+01	.1225000+02	.4287500+02
.1500625+03	.5252137+03	.1838266+04		
-.1094000-01	.1000000+01	.3520000+01	.1239040+02	.4361421+02
.1535220+03	.5403975+03	.1902199+04		
-.1126000-01	.1000000+01	.3540000+01	.1253160+02	.4436186+02
.1570410+03	.5559251+03	.1967975+04		
-.1155000-01	.1000000+01	.3560000+01	.1267360+02	.4511802+02
.1606201+03	.5718077+03	.2035635+04		
-.1183000-01	.1000000+01	.3580000+01	.1281640+02	.4588271+02
.1642601+03	.5880512+03	.2105223+04		
-.1209000-01	.1000000+01	.3600000+01	.1296000+02	.4665600+02
.1679616+03	.6046618+03	.2176782+04		
-.1233000-01	.1000000+01	.3620000+01	.1310440+02	.4743793+02
.1717253+03	.6216456+03	.2250357+04		
-.1255000-01	.1000000+01	.3640000+01	.1324960+02	.4823854+02
.1755519+03	.6390089+03	.2325992+04		
-.1275000-01	.1000000+01	.3660000+01	.1339560+02	.4902790+02
.1794421+03	.6567581+03	.2403735+04		
-.1293000-01	.1000000+01	.3680000+01	.1354240+02	.4983603+02
.1833966+03	.6748995+03	.2483630+04		
-.1310000-01	.1000000+01	.3700000+01	.1369000+02	.5065300+02
.1874161+03	.6934396+03	.2565726+04		
-.1325000-01	.1000000+01	.3720000+01	.1383840+02	.5147885+02
.1915013+03	.7123849+03	.2650072+04		
-.1338000-01	.1000000+01	.3740000+01	.1398760+02	.5231362+02
.1956530+03	.7317421+03	.2736715+04		
-.1350000-01	.1000000+01	.3760000+01	.1413760+02	.5315738+02
.1998717+03	.7515177+03	.2825707+04		
-.1360000-01	.1000000+01	.3780000+01	.1428840+02	.5401015+02
.2041584+03	.7717187+03	.2917097+04		
-.1369000-01	.1000000+01	.3800000+01	.1444000+02	.5487200+02
.2085136+03	.7923517+03	.3010936+04		
-.1376000-01	.1000000+01	.3820000+01	.1459240+02	.5574297+02
.2129381+03	.8134237+03	.3107279+04		
-.1382000-01	.1000000+01	.3840000+01	.1474560+02	.5662310+02
.2174327+03	.8349417+03	.3206176+04		
-.1387000-01	.1000000+01	.3860000+01	.1489960+02	.5751241+02
.2219981+03	.8569126+03	.3307683+04		
-.1390000-01	.1000000+01	.3880000+01	.1505440+02	.5841107+02
.2266350+03	.8793437+03	.3411853+04		
-.1392000-01	.1000000+01	.3900000+01	.1521000+02	.5931900+02
.2313441+03	.9022429+03	.3518744+04		
-.1393000-01	.1000000+01	.3920000+01	.1536640+02	.6023629+02
.2361262+03	.9256149+03	.3628410+04		
-.1393000-01	.1000000+01	.3940000+01	.1552360+02	.6116293+02
.2409822+03	.9494697+03	.3740911+04		
-.1392000-01	.1000000+01	.3960000+01	.1568160+02	.6209914+02
.2459126+03	.9738133+03	.3856303+04		
-.1389000-01	.1000000+01	.3980000+01	.1584040+02	.6304479+02
.2509193+03	.9986547+03	.3974645+04		
-.1386000-01	.1000000+01	.4000000+01	.1600000+02	.6400000+02
.2560000+03	.1024000+04	.4096000+04		

P15 : GENERAL DATA FITTING PROBLEM
100 6

.1478690+01	.1000000+01	.1000000+00	.1000000+00	.1000000-01
.1000000-01	.1000000-01			
.1113270+01	.1000000+01	.2000000+00	.1000000+00	.2000000-01
.4000000-01	.1000000-01			
.8550300+00	.1000000+01	.3000000+00	.1000000+00	.3000000-01
.3000000-01	.1000000-01			
.6739900+00	.1000000+01	.4000000+00	.1000000+00	.4000000-01
.1600000+00	.1000000-01			
.5413700+00	.1000000+01	.5000000+00	.1000000+00	.5000000-01
.2500000+00	.1000000-01			
.4423700+00	.1000000+01	.6000000+00	.1000000+00	.6000000-01
.3600000+00	.1000000-01			
.3652600+00	.1000000+01	.7000000+00	.1000000+00	.7000000-01
.4900000+00	.1000000-01			
.3043400+00	.1000000+01	.8000000+00	.1000000+00	.8000000-01
.6400000+00	.1000000-01			
.2554500+00	.1000000+01	.9000000+00	.1000000+00	.9000000-01
.8100000+00	.1000000-01			
.2157300+00	.1000000+01	.1000000+01	.1000000+00	.1000000+00
.1000000+01	.1000000-01			
.1027550+01	.1000000+01	.1000000+00	.2000000+00	.2000000-01
.1000000-01	.4000000-01			
.8848200+00	.1000000+01	.2000000+00	.2000000+00	.4000000-01
.4000000-01	.4000000-01			
.7300100+00	.1000000+01	.3000000+00	.2000000+00	.6000000-01
.9000000-01	.4000000-01			
.5984900+00	.1000000+01	.4000000+00	.2000000+00	.8000000-01
.1600000+00	.4000000-01			
.4927700+00	.1000000+01	.5000000+00	.2000000+00	.1000000+00
.2500000+00	.4000000-01			
.4084600+00	.1000000+01	.6000000+00	.2000000+00	.1200000+00
.3600000+00	.4000000-01			
.3408800+00	.1000000+01	.7000000+00	.2000000+00	.1400000+00
.4900000+00	.4000000-01			
.2862500+00	.1000000+01	.8000000+00	.2000000+00	.1600000+00
.6400000+00	.4000000-01			
.2416900+00	.1000000+01	.9000000+00	.2000000+00	.1800000+00
.8100000+00	.4000000-01			
.2050500+00	.1000000+01	.1000000+01	.2000000+00	.2000000+00
.1000000+01	.4000000-01			
.6926100+00	.1000000+01	.1000000+00	.3000000+00	.3000000-01
.1000000-01	.9000000-01			
.6529600+00	.1000000+01	.2000000+00	.3000000+00	.6000000-01
.4000000-01	.9000000-01			
.5775000+00	.1000000+01	.3000000+00	.3000000+00	.9000000-01
.9000000-01	.9000000-01			
.4964900+00	.1000000+01	.4000000+00	.3000000+00	.1200000+00
.1600000+00	.9000000-01			
.4222100+00	.1000000+01	.5000000+00	.3000000+00	.1500000+00
.2500000+00	.9000000-01			
.3579900+00	.1000000+01	.6000000+00	.3000000+00	.1800000+00
.3600000+00	.9000000-01			
.3037200+00	.1000000+01	.7000000+00	.3000000+00	.2100000+00
.4900000+00	.9000000-01			
.2582100+00	.1000000+01	.8000000+00	.3000000+00	.2400000+00

.4300000+00	.9000000-01			
.2201000+00	.1000000+01	.9000000+00	.3000000+00	.2700000+00
.9100000+00	.9000000-01			
.1881500+00	.1000000+01	.1000000+01	.3000000+00	.3000000+00
.1000000+01	.9000000-01			
.4435000+00	.1000000+01	.1000000+00	.4000000+00	.4000000-01
.1000000-01	.1600000+00			
.4527500+00	.1000000+01	.2000000+00	.4000000+00	.8000000-01
.4000000-01	.1600000+00			
.4274700+00	.1000000+01	.3000000+00	.4000000+00	.1200000+00
.2000000-01	.1600000+00			
.3863900+00	.1000000+01	.4000000+00	.4000000+00	.1600000+00
.1600000+00	.1600000+00			
.3411100+00	.1000000+01	.5000000+00	.4000000+00	.2000000+00
.2500000+00	.1600000+00			
.2974400+00	.1000000+01	.6000000+00	.4000000+00	.2400000+00
.3600000+00	.1600000+00			
.2577700+00	.1000000+01	.7000000+00	.4000000+00	.2800000+00
.4900000+00	.1600000+00			
.2227800+00	.1000000+01	.8000000+00	.4000000+00	.3200000+00
.6400000+00	.1600000+00			
.1923900+00	.1000000+01	.9000000+00	.4000000+00	.3600000+00
.8100000+00	.1600000+00			
.1661900+00	.1000000+01	.1000000+01	.4000000+00	.4000000+00
.1000000+01	.1600000+00			
.2517600+00	.1000000+01	.1000000+00	.5000000+00	.5000000-01
.1000000-01	.2500000+00			
.2863600+00	.1000000+01	.2000000+00	.5000000+00	.1000000+00
.4000000-01	.2500000+00			
.2919000+00	.1000000+01	.3000000+00	.5000000+00	.1500000+00
.9000000-01	.2500000+00			
.2795000+00	.1000000+01	.4000000+00	.5000000+00	.2000000+00
.1600000+00	.2500000+00			
.2578700+00	.1000000+01	.5000000+00	.5000000+00	.2500000+00
.2500000+00	.2500000+00			
.2326500+00	.1000000+01	.6000000+00	.5000000+00	.3000000+00
.3600000+00	.2500000+00			
.2070200+00	.1000000+01	.7000000+00	.5000000+00	.3500000+00
.4900000+00	.2500000+00			
.1827200+00	.1000000+01	.8000000+00	.5000000+00	.4000000+00
.6400000+00	.2500000+00			
.1604800+00	.1000000+01	.9000000+00	.5000000+00	.4500000+00
.8100000+00	.2500000+00			
.1405500+00	.1000000+01	.1000000+01	.5000000+00	.5000000+00
.1000000+01	.2500000+00			
.1004500+00	.1000000+01	.1000000+00	.6000000+00	.6000000-01
.1000000-01	.3600000+00			
.1490700+00	.1000000+01	.2000000+00	.6000000+00	.1200000+00
.4000000-01	.3600000+00			
.1737700+00	.1000000+01	.3000000+00	.6000000+00	.1800000+00
.9000000-01	.3600000+00			
.1813200+00	.1000000+01	.4000000+00	.6000000+00	.2400000+00
.1600000+00	.3600000+00			
.1778200+00	.1000000+01	.5000000+00	.6000000+00	.3000000+00
.2500000+00	.3600000+00			
.1679200+00	.1000000+01	.6000000+00	.6000000+00	.3600000+00
.3600000+00	.3600000+00			
.1543200+00	.1000000+01	.7000000+00	.6000000+00	.4200000+00

.4900000+00	.3600000+00			
.1405200+00	.1000000+01	.8000000+00	.6000000+00	.4800000+00
.6400000+00	.3600000+00			
.1262200+00	.1000000+01	.9000000+00	.6000000+00	.5400000+00
.8100000+00	.3600000+00			
.1125900+00	.1000000+01	.1000000+01	.6000000+00	.6000000+00
.1000000+01	.3600000+00			
-.2074000-01	.1000000+01	.1000000+00	.7000000+00	.7000000-01
.1000000-01	.4900000+00			
.3587000-01	.1000000+01	.2000000+00	.7000000+00	.1400000+00
.4000000-01	.4900000+00			
.7267000-01	.1000000+01	.3000000+00	.7000000+00	.2100000+00
.9000000-01	.4900000+00			
.9393000-01	.1000000+01	.4000000+00	.7000000+00	.2800000+00
.1600000+00	.4900000+00			
.1039100+00	.1000000+01	.5000000+00	.7000000+00	.3500000+00
.2500000+00	.4900000+00			
.1062300+00	.1000000+01	.6000000+00	.7000000+00	.4200000+00
.3600000+00	.4900000+00			
.1036700+00	.1000000+01	.7000000+00	.7000000+00	.4900000+00
.4900000+00	.4900000+00			
.9822000-01	.1000000+01	.8000000+00	.7000000+00	.5600000+00
.6400000+00	.4900000+00			
.9124000-01	.1000000+01	.9000000+00	.7000000+00	.6300000+00
.8100000+00	.4900000+00			
.8361000-01	.1000000+01	.1000000+01	.7000000+00	.7000000+00
.1000000+01	.4900000+00			
-.1184300+00	.1000000+01	.1000000+00	.8000000+00	.8000000-01
.1000000-01	.6400000+00			
-.9736000-01	.1000000+01	.2000000+00	.8000000+00	.1600000+00
.4000000-01	.6400000+00			
-.1292000-01	.1000000+01	.3000000+00	.8000000+00	.2400000+00
.9000000-01	.6400000+00			
.1770000-01	.1000000+01	.4000000+00	.8000000+00	.3200000+00
.1600000+00	.6400000+00			
.3752000-01	.1000000+01	.5000000+00	.8000000+00	.4000000+00
.2500000+00	.6400000+00			
.4929000-01	.1000000+01	.6000000+00	.8000000+00	.4800000+00
.3600000+00	.6400000+00			
.6531000-01	.1000000+01	.7000000+00	.8000000+00	.5600000+00
.4900000+00	.6400000+00			
.9739000-01	.1000000+01	.8000000+00	.8000000+00	.6400000+00
.6400000+00	.6400000+00			
.9685000-01	.1000000+01	.9000000+00	.8000000+00	.7200000+00
.8100000+00	.6400000+00			
.5467000-01	.1000000+01	.1000000+01	.8000000+00	.8000000+00
.1000000+01	.6400000+00			
-.1971400+00	.1000000+01	.1000000+00	.9000000+00	.9000000-01
.1000000-01	.8100000+00			
-.1338300+00	.1000000+01	.2000000+00	.9000000+00	.1800000+00
.4000000-01	.8100000+00			
-.8469000-01	.1000000+01	.3000000+00	.9000000+00	.2700000+00
.9000000-01	.8100000+00			
-.4776000-01	.1000000+01	.4000000+00	.9000000+00	.3600000+00
.1600000+00	.8100000+00			
-.2089000-01	.1000000+01	.5000000+00	.9000000+00	.4500000+00
.2500000+00	.8100000+00			
-.1990000-02	.1000000+01	.6000000+00	.9000000+00	.5400000+00

.3600000+00	.8100000+00			
.1083000-01	.1000000+01	.7000000+00	.9000000+00	.6300000+00
.4900000+00	.8100000+00			
.1910000-01	.1000000+01	.8000000+00	.9000000+00	.7200000+00
.6400000+00	.8100000+00			
.2406000-01	.1000000+01	.9000000+00	.9000000+00	.8100000+00
.8100000+00	.8100000+00			
.2668000-01	.1000000+01	.1000000+01	.9000000+00	.9000000+00
.1000000+01	.8100000+00			
-.2601000+00	.1000000+01	.1000000+00	.1000000+01	.1000000+00
.1000000-01	.1000000+01			
-.1960500+00	.1000000+01	.2000000+00	.1000000+01	.2000000+00
.4000000-01	.1000000+01			
-.1442100+00	.1000000+01	.3000000+00	.1000000+01	.3000000+00
.9000000-01	.1000000+01			
-.1031900+00	.1000000+01	.4000000+00	.1000000+01	.4000000+00
.1500000+00	.1000000+01			
-.7139000-01	.1000000+01	.5000000+00	.1000000+01	.5000000+00
.2500000+00	.1000000+01			
-.4722000-01	.1000000+01	.6000000+00	.1000000+01	.6000000+00
.3600000+00	.1000000+01			
-.2917000-01	.1000000+01	.7000000+00	.1000000+01	.7000000+00
.4900000+00	.1000000+01			
-.1594000-01	.1000000+01	.8000000+00	.1000000+01	.8000000+00
.6400000+00	.1000000+01			
-.6420000-02	.1000000+01	.9000000+00	.1000000+01	.9000000+00
.8100000+00	.1000000+01			
.2300000-03	.1000000+01	.1000000+01	.1000000+01	.1000000+01
.1000000+01	.1000000+01			

```
HP16 : SPLINE FITTING PROB_34
 51    8
 .0000000    .1000000+01    .0000000    .0000000    .0000000
 .0000000    .0000000    .0000000    .0000000
 .1414200+00    .1000000+01    .2000000-01    .4000000-02    .1000000-04
 .0000000    .0000000    .0000000    .0000000
 .2000000+00    .1000000+01    .4000000-01    .1600000-02    .6000000-04
 .0000000    .0000000    .0000000    .0000000
 .2449500+00    .1000000+01    .6000000-01    .3600000-02    .2200000-03
 .0000000    .0000000    .0000000    .0000000
 .2828400+00    .1000000+01    .8000000-01    .6400000-02    .5100000-03
 .0000000    .0000000    .0000000    .0000000
 .3162300+00    .1000000+01    .1000000+00    .1000000-01    .1000000-02
 .0000000    .0000000    .0000000    .0000000
 .3464100+00    .1000000+01    .1200000+00    .1440000-01    .1730000-02
 .1000000-04    .0000000    .0000000    .0000000
 .3741700+00    .1000000+01    .1400000+00    .1960000-01    .2740000-02
 .6000000-04    .0000000    .0000000    .0000000
 .4000000+00    .1000000+01    .1600000+00    .2560000-01    .4100000-02
 .2200000-03    .0000000    .0000000    .0000000
 .4242600+00    .1000000+01    .1800000+00    .3240000-01    .5830000-02
 .5100000-03    .0000000    .0000000    .0000000
 .4472100+00    .1000000+01    .2000000+00    .4000000-01    .8000000-02
 .1000000-02    .0000000    .0000000    .0000000
 .4690400+00    .1000000+01    .2200000+00    .4840000-01    .1065000-01
 .1730000-02    .1000000-04    .0000000    .0000000
 .4899000+00    .1000000+01    .2400000+00    .5760000-01    .1382000-01
 .2740000-02    .6000000-04    .0000000    .0000000
 .5099000+00    .1000000+01    .2600000+00    .6760000-01    .1758000-01
 .4100000-02    .2200000-03    .0000000    .0000000
 .5291500+00    .1000000+01    .2800000+00    .7840000-01    .2195000-01
 .5830000-02    .5100000-03    .0000000    .0000000
 .5477200+00    .1000000+01    .3000000+00    .9000000-01    .2700000-01
 .8000000-02    .1000000-02    .0000000    .0000000
 .5656900+00    .1000000+01    .3200000+00    .1024000+00    .3277000-01
 .1065000-01    .1730000-02    .0000000    .0000000
 .5831000+00    .1000000+01    .3400000+00    .1156000+00    .3930000-01
 .1382000-01    .2740000-02    .0000000    .0000000
 .6000000+00    .1000000+01    .3600000+00    .1296000+00    .4660000-01
 .1758000-01    .4100000-02    .0000000    .0000000
 .6164400+00    .1000000+01    .3800000+00    .1444000+00    .5487000-01
 .2195000-01    .5830000-02    .0000000    .0000000
 .6324600+00    .1000000+01    .4000000+00    .1600000+00    .6400000-01
 .2700000-01    .8000000-02    .0000000    .0000000
 .6480700+00    .1000000+01    .4200000+00    .1764000+00    .7403000-01
 .3277000-01    .1065000-01    .1000000-04    .0000000
 .6633200+00    .1000000+01    .4400000+00    .1936000+00    .8518000-01
 .3930000-01    .1382000-01    .6000000-04    .0000000
 .6782300+00    .1000000+01    .4600000+00    .2116000+00    .9734000-01
 .4660000-01    .1758000-01    .2200000-03    .0000000
 .6928200+00    .1000000+01    .4800000+00    .2304000+00    .1105000+00
 .5487000-01    .2195000-01    .5100000-03    .0000000
 .7071100+00    .1000000+01    .5000000+00    .2500000+00    .1250000+00
 .6400000-01    .2700000-01    .1000000-02    .0000000
 .7211100+00    .1000000+01    .5200000+00    .2704000+00    .1406100+00
 .7403000-01    .3277000-01    .1730000-02    .0000000
 .7348500+00    .1000000+01    .5400000+00    .2916000+00    .1574600+00
```

.8518000-01	.8930000-01	.2740000-02	.0000000	
.7483300+00	.1000000+01	.5600000+00	.3136000+00	.1756200+00
.9734000-01	.4665000-01	.4100000-02	.0000000	
.7613800+00	.1000000+01	.5800000+00	.3364000+00	.1951100+00
.1105900+00	.5487000-01	.5830000-02	.0000000	
.7746000+00	.1000000+01	.6000000+00	.3600000+00	.2160000+00
.1250000+00	.6400000-01	.8000000-02	.0000000	
.7874000+00	.1000000+01	.6200000+00	.3844000+00	.2383300+00
.1406100+00	.7409000-01	.1065000-01	.0000000	
.8000000+00	.1000000+01	.6400000+00	.4096000+00	.2621400+00
.1574600+00	.8518000-01	.1382000-01	.0000000	
.8124000+00	.1000000+01	.6600000+00	.4356000+00	.2875000+00
.1756200+00	.9734000-01	.1758000-01	.0000000	
.8246200+00	.1000000+01	.6800000+00	.4624000+00	.3144300+00
.1951100+00	.1105900+00	.2195000-01	.0000000	
.8366600+00	.1000000+01	.7000000+00	.4900000+00	.3430000+00
.2160000+00	.1250000+00	.2700000-01	.0000000	
.8485300+00	.1000000+01	.7200000+00	.5184000+00	.3732500+00
.2383300+00	.1406100+00	.3277000-01	.1000000-04	
.8602300+00	.1000000+01	.7400000+00	.5476000+00	.4052200+00
.2621400+00	.1574600+00	.3930000-01	.6000000-04	
.8717800+00	.1000000+01	.7600000+00	.5776000+00	.4389800+00
.2875000+00	.1756200+00	.4660000-01	.2200000-03	
.8831800+00	.1000000+01	.7800000+00	.6084000+00	.4745500+00
.3144300+00	.1951100+00	.5487000-01	.5100000-03	
.8944300+00	.1000000+01	.8000000+00	.6400000+00	.5120000+00
.3430000+00	.2160000+00	.6400000-01	.1000000-02	
.9055400+00	.1000000+01	.8200000+00	.6724000+00	.5513700+00
.3732500+00	.2383300+00	.7409000-01	.1730000-02	
.9165200+00	.1000000+01	.8400000+00	.7056000+00	.5927000+00
.4052200+00	.2621400+00	.8513000-01	.2740000-02	
.9273600+00	.1000000+01	.8600000+00	.7396000+00	.6360600+00
.4389800+00	.2875000+00	.9734000-01	.4100000-02	
.9380800+00	.1000000+01	.8800000+00	.7744000+00	.6814700+00
.4745500+00	.3144300+00	.1105900+00	.5830000-02	
.9486800+00	.1000000+01	.9000000+00	.8100000+00	.7290000+00
.5120000+00	.3430000+00	.1250000+00	.8000000-02	
.9591700+00	.1000000+01	.9200000+00	.8464000+00	.7786900+00
.5513700+00	.3732500+00	.1406100+00	.1065000-01	
.9695400+00	.1000000+01	.9400000+00	.8836000+00	.8305800+00
.5927000+00	.4052200+00	.1574600+00	.1382000-01	
.9798000+00	.1000000+01	.9600000+00	.9216000+00	.8847400+00
.6360600+00	.4389800+00	.1756200+00	.1758000-01	
.9899500+00	.1000000+01	.9800000+00	.9604000+00	.9411900+00
.6814700+00	.4745500+00	.1951100+00	.2195000-01	
.1000000+01	.1000000+01	.1000000+01	.1000000+01	.1000000+01
.7290000+00	.5120000+00	.2160000+00	.2700000-01	

```
HP17 : POLYNOMIAL APPROXIMATION PROBLEM
  23    6
 -.1000000+01   .1000000+01  -.1570300+01   .2467400+01  -.3875780+01
  .6038070+01  -.9563120+01
 -.9876900+00   .1000000+01  -.1413720+01   .1998390+01  -.2825450+01
  .3994380+01  -.5646920+01
 -.9510600+00   .1000000+01  -.1256640+01   .1579140+01  -.1984400+01
  .2493670+01  -.3133640+01
 -.9910100+00   .1000000+01  -.1099560+01   .1209030+01  -.1329390+01
  .1461750+01  -.1607270+01
 -.9090200+00   .1000000+01  -.9424800+00   .8882600+00  -.8371700+00
  .7890100+00  -.7436300+00
 -.7071100+00   .1000000+01  -.7854000+00   .6168500+00  -.4844700+00
  .3805000+00  -.2988500+00
 -.5877900+00   .1000000+01  -.6283200+00   .3947800+00  -.2480500+00
  .1558500+00  -.9793000-01
 -.4539900+00   .1000000+01  -.4712400+00   .2220700+00  -.1046500+00
  .4931000-01  -.2324000-01
 -.3090200+00   .1000000+01  -.3141600+00   .9870000-01  -.3101300-01
  .9740000-02  -.3060000-02
 -.1564300+00   .1000000+01  -.1570300+00   .2467000-01  -.3880000-02
  .6100000-03  -.1000000-03
  .0000000      .1000000+01   .0000000      .0000000      .0000000
  .0000000      .0000000
  .1564300+00   .1000000+01   .1570300+00   .2467000-01   .3880000-02
  .6100000-03   .1000000-03
  .3090200+00   .1000000+01   .3141600+00   .9870000-01   .3101300-01
  .9740000-02   .3060000-02
  .4539900+00   .1000000+01   .4712400+00   .2220700+00   .1046500+00
  .4931000-01   .2324000-01
  .5877900+00   .1000000+01   .6283200+00   .3947800+00   .2480500+00
  .1558500+00   .9793000-01
  .7071100+00   .1000000+01   .7854000+00   .6168500+00   .4844700+00
  .3805000+00   .2988500+00
  .9090200+00   .1000000+01   .9424800+00   .8882600+00   .8371700+00
  .7890100+00   .7436300+00
  .9910100+00   .1000000+01   .1099560+01   .1209030+01   .1329390+01
  .1461750+01   .1607270+01
  .9510600+00   .1000000+01   .1256640+01   .1579140+01   .1984400+01
  .2493670+01   .3133640+01
  .9876900+00   .1000000+01   .1413720+01   .1998390+01   .2825450+01
  .3994380+01   .5646920+01
  .1000000+01   .1000000+01   .1570800+01   .2467400+01   .3875780+01
  .6038070+01   .9563120+01
  .0000000      .0000000      .1000000+04  -.3141593+04   .7402203+04
 -.1550314+05   .3044034+05
  .0000000      .0000000      .1000000+04   .3141593+04   .7402203+04
  .1550314+05   .3044034+05
```

```
HP1A : POLYNOMIAL APPROXIMATION PROBLEM
  53     6
-.1000000+01   .1000000+01  -.1570600+01   .2467400+01  -.3875730+01
 .6083070+01  -.9563120+01
-.9980300+00   .1000000+01  -.1507960+01   .2273960+01  -.3429360+01
 .5170880+01  -.7797300+01
-.9921100+00   .1000000+01  -.1445130+01   .2088410+01  -.3018030+01
 .4361450+01  -.6302870+01
-.9822900+00   .1000000+01  -.1382300+01   .1910760+01  -.2641940+01
 .3650990+01  -.5045760+01
-.9685800+00   .1000000+01  -.1319470+01   .1741000+01  -.2297190+01
 .3031070+01  -.3999410+01
-.9510600+00   .1000000+01  -.1256640+01   .1579140+01  -.1984400+01
 .2493670+01  -.3133640+01
-.9297800+00   .1000000+01  -.1193810+01   .1425170+01  -.1701880+01
 .2031110+01  -.2424750+01
-.9048300+00   .1000000+01  -.1130970+01   .1279100+01  -.1446630+01
 .1636100+01  -.1850380+01
-.8763100+00   .1000000+01  -.1068140+01   .1140930+01  -.1218670+01
 .1301710+01  -.1390410+01
-.8443300+00   .1000000+01  -.1005310+01   .1010650+01  -.1016910+01
 .1021410+01  -.1026830+01
-.8090200+00   .1000000+01  -.9424800+00   .8882600+00  -.8371700+00
 .7890100+00  -.7436300+00
-.7705100+00   .1000000+01  -.8796500+00   .7737600+00  -.6806500+00
 .5987300+00  -.5266700+00
-.7289700+00   .1000000+01  -.8168100+00   .6671900+00  -.5449700+00
 .4451400+00  -.3635900+00
-.6845500+00   .1000000+01  -.7539800+00   .5684900+00  -.4286300+00
 .3231300+00  -.2436700+00
-.6374200+00   .1000000+01  -.6911500+00   .4776900+00  -.3301500+00
 .2281900+00  -.1577100+00
-.5877900+00   .1000000+01  -.6283200+00   .3947800+00  -.2480300+00
 .1558500+00  -.9793000-01
-.5358300+00   .1000000+01  -.5654900+00   .3197800+00  -.1808300+00
 .1022600+00  -.5782000-01
-.4817500+00   .1000000+01  -.5026500+00   .2526600+00  -.1270000+00
 .6334000-01  -.3209000-01
-.4257800+00   .1000000+01  -.4398200+00   .1934400+00  -.8503000-01
 .3742000-01  -.1646000-01
-.3681200+00   .1000000+01  -.3769900+00   .1421200+00  -.5358000-01
 .2020000-01  -.7610000-02
-.3090200+00   .1000000+01  -.3141500+00   .9870000-01  -.3101000-01
 .9740000-02  -.3060000-02
-.2486900+00   .1000000+01  -.2513300+00   .6317000-01  -.1588000-01
 .3990000-02  -.1000000-02
-.1873300+00   .1000000+01  -.1885000+00   .3553000-01  -.6700000-02
 .1260000-02  -.2400000-03
-.1253300+00   .1000000+01  -.1256600+00   .1579000-01  -.1980000-02
 .2500000-03  -.3000000-04
-.6274000-01   .1000000+01  -.6283000-01   .3950000-02  -.2500000-03
 .2000000-04   .0000000
 .0000000      .1000000+01   .0000000      .0000000     .0000000
 .0000000      .0000000
 .6279000-01   .1000000+01   .6283000-01   .3950000-02  .2500000-03
 .2000000-04   .0000000
 .1253300+00   .1000000+01   .1256600+00   .1579000-01  .1980000-02
```

.2500000-03	.3000000-04			
.1873800+00	.1000000+01	.1885000+00	.3553000-01	.6703000-01
.1260000-02	.2400000-03			
.2486900+00	.1000000+01	.2513300+00	.6317000-01	.1588000-01
.3990000-02	.1000000-02			
.3090200+00	.1000000+01	.3141600+00	.9870000-01	.3101000-01
.9740000-02	.3060000-02			
.3681200+00	.1000000+01	.3769900+00	.1421200+00	.5383000-01
.2020000-01	.7610000-02			
.4257800+00	.1000000+01	.4398200+00	.1934400+00	.8503000-01
.3742000-01	.1646000-01			
.4817500+00	.1000000+01	.5026500+00	.2526000+00	.1270000+00
.6384000-01	.3209000-01			
.5358300+00	.1000000+01	.5654900+00	.3197800+00	.1808300+00
.1022600+00	.5782000-01			
.5877900+00	.1000000+01	.6283200+00	.3947800+00	.2481700+00
.1558500+00	.9733000-01			
.6374200+00	.1000000+01	.6911500+00	.4775900+00	.3301500+00
.2281900+00	.1577100+00			
.6846500+00	.1000000+01	.7539800+00	.5684000+00	.4286300+00
.3231800+00	.2436700+00			
.7289700+00	.1000000+01	.8168100+00	.6671000+00	.5449700+00
.4451400+00	.3435900+00			
.7705100+00	.1000000+01	.8796500+00	.7737300+00	.6806500+00
.5987300+00	.5206700+00			
.8090200+00	.1000000+01	.9424800+00	.8882600+00	.8371700+00
.7390100+00	.7436300+00			
.8443300+00	.1000000+01	.1005510+01	.1010650+01	.1016010+01
.1021410+01	.1026830+01			
.8763100+00	.1000000+01	.1068140+01	.1140930+01	.1218670+01
.1301710+01	.1390410+01			
.9048300+00	.1000000+01	.1130970+01	.1279100+01	.1446650+01
.1636100+01	.1850390+01			
.9297800+00	.1000000+01	.1193810+01	.1425170+01	.1701380+01
.2031110+01	.2424750+01			
.9510600+00	.1000000+01	.1256640+01	.1579140+01	.1984400+01
.2493670+01	.3133640+01			
.9685800+00	.1000000+01	.1319470+01	.1741000+01	.2297190+01
.3031070+01	.3999410+01			
.9822900+00	.1000000+01	.1382300+01	.1910760+01	.2641240+01
.3650990+01	.5046760+01			
.9921100+00	.1000000+01	.1445130+01	.2088410+01	.3018030+01
.4361450+01	.6202870+01			
.9980300+00	.1000000+01	.1507960+01	.2273960+01	.3429050+01
.5170880+01	.7797500+01			
.1000000+01	.1000000+01	.1570800+01	.2467400+01	.3875790+01
.6038070+01	.9563120+01			
.0000000	.0000000	.1000000+04	-.3141593+04	.7402203+04
-.1550314+05	.3044034+05			
.0000000	.0000000	.1000000+04	.3141593+04	.7402203+04
.1550314+05	.3044034+05			

HP19 : POLYNOMIAL APPROXIMATION PROBLEM

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-.1000000+01	.1000000+01	-.1570800+01	.2467400+01	-.3875780+01
.6038070+01	-.9563120+01			
-.9995100+00	.1000000+01	-.1539380+01	.2369600+01	-.3647[illegible]0+01
.5615440+01	-.8644300+01			
-.9980300+00	.1000000+01	-.1507960+01	.2273960+01	-.3429[illegible]0+01
.5170680+01	-.7797500+01			
-.9955600+00	.1000000+01	-.1476550+01	.2180200+01	-.3219160+01
.4753250+01	-.7013410+01			
-.9921100+00	.1000000+01	-.1445130+01	.2088410+01	-.3013030+01
.4361450+01	-.6302870+01			
-.9876900+00	.1000000+01	-.1413720+01	.1993590+01	-.2825450+01
.3994380+01	-.5646920+01			
-.9822900+00	.1000000+01	-.1382300+01	.1910760+01	-.2641240+01
.3650990+01	-.5046760+01			
-.9759200+00	.1000000+01	-.1350880+01	.1824[illegible]0+01	-.2465220+01
.3330220+01	-.4498750+01			
-.9685800+00	.1000000+01	-.1319470+01	.1741000+01	-.2297[illegible]0+01
.3031070+01	-.3999410+01			
-.9602900+00	.1000000+01	-.1288050+01	.1659[illegible]30+01	-.2136[illegible]0+01
.2752550+01	-.3545430+01			
-.9510600+00	.1000000+01	-.1256640+01	.1570140+01	-.1984400+01
.2493670+01	-.3133640+01			
-.9408800+00	.1000000+01	-.1225220+01	.1501170+01	-.1839260+01
.2253500+01	-.2761040+01			
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.1825600+01	-.2122050+01			
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.1636100+01	-.1850380+01			
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.1461750+01	-.1607270+01			
-.8763100+00	.1000000+01	-.1068140+01	.1140930+01	-.1218570+01
.1301710+01	-.1390410+01			
-.8607400+00	.1000000+01	-.1036730+01	.1074300+01	-.1114270+01
.1155190+01	-.1197620+01			
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.1021410+01	-.1025830+01			
-.8270800+00	.1000000+01	-.9738[illegible]00+00	.9484700+00	-.9237100+00
.8995900+00	-.8761100+00			
-.8090200+00	.1000000+01	-.9424800+00	.8882600+00	-.8371700+00
.7890100+00	-.7436300+00			
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.6889600+00	-.6276800+00			
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.5987300+00	-.5266700+00			
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.5176700+00	-.4391000+00			
-.7289700+00	.1000000+01	-.8168100+00	.6671900+00	-.5449700+00
.4451400+00	-.3635900+00			
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.3805000+00	-.2988500+00			
-.6845500+00	.1000000+01	-.75[illegible]300+00	.5684[illegible]00+00	-.4[illegible]300+00
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.1894400+00	-.1249800+00			
-.5877900+00	.1000000+01	-.6283200+00	.3947800+00	-.2480500+00
.1558500+00	-.9793000-01			
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.1426000-01	-.4930000-02			
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.9740000-02	.3060000-02			
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.1426000-01	.4930000-02			
.3681200+00	.1000000+01	.3769900+00	.1421200+00	.5358000-01
.2020000-01	.7610000-02			
.3971500+00	.1000000+01	.4084100+00	.1668000+00	.6812000-01
.2782000-01	.1136000-01			
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.8136000-01	.4345000-01			
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.1022600+00	.5782000-01			
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.1301710+01	.1390410+01			
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.9177500+00     .1000000+01     .1162390+01     .1351150+01     .1570560+01
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.9297800+00     .1000000+01     .1193810+01     .1425170+01     .1701380+01
.2031110+01     .2424750+01
.9408800+00     .1000000+01     .1225220+01     .1501170+01     .1839260+01
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.9685800+00     .1000000+01     .1319470+01     .1741000+01     .2297190+01
.3031070+01     .3999410+01
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.4753250+01     .7018410+01
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   .5170880+01    -.7797500+01
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-.2272000+00    .4273800+00   -.9040700+00   -.4425200+00   -.8967400+00
-.9775300+00   -.2108000+00
 .1648720+01    .1000000+01    .8134200+00    .5816300+00    .9463000+00
-.3232900+00    .2874800+00   -.9577900+00   -.6118600+00   -.7909700+00
-.9992900+00    .3760000-01
 .1648720+01    .1000000+01    .8414700+00    .5403000+00    .9093000+00
-.4161500+00    .1411200+00   -.9399900+00   -.7568000+00   -.6536400+00
-.9589200+00    .2836600+00
```

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HP22 : TRIGONOMETRIC APPROXIMATION PROBLEM
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   .1000000+01    .0000000       .1000000+01 .0000000       .1000000+01
   .0000000       .1000000+01
   .1020200+01    .1000000+01    .2000000-01 .9998000+00    .3999000-01
   .9992000+00    .5996000-01    .9982000+00 .7991000-01    .9968000+00
   .9983000-01    .9950000+00
   .1040810+01    .1000000+01    .3999000-01 .9992000+00    .7991000-01
   .9968000+00    .1197100+00    .9928100+00 .1593200+00    .9872300+00
   .1986700+00    .9800700+00
   .1061840+01    .1000000+01    .5996000-01 .9982000+00    .1197100+00
   .9928100+00    .1790300+00    .9838400+00 .2377000+00    .9713400+00
   .2955200+00    .9553400+00
   .1083290+01    .1000000+01    .7991000-01 .9968000+00    .1593200+00
   .9872300+00    .2377000+00    .9713400+00 .3145700+00    .9492400+00
   .3894200+00    .9210600+00
   .1105170+01    .1000000+01    .9983000-01 .9950000+00    .1986700+00
   .9800700+00    .2955200+00    .9553400+00 .3894200+00    .9210600+00
   .4794300+00    .8775800+00
   .1127500+01    .1000000+01    .1197100+00 .9928100+00    .2377000+00
   .9713400+00    .3522700+00    .9359000+00 .4617800+00    .8869900+00
   .5646400+00    .8253400+00
   .1150270+01    .1000000+01    .1395400+00 .9902200+00    .2763600+00
   .9610600+00    .4077600+00    .9130900+00 .5311900+00    .8472600+00
   .6442200+00    .7648400+00
   .1173510+01    .1000000+01    .1593200+00 .9872300+00    .3145700+00
   .9492400+00    .4617800+00    .8869900+00 .5972000+00    .8021000+00
   .7173600+00    .6967100+00
   .1197220+01    .1000000+01    .1790300+00 .9838400+00    .3522700+00
   .9359000+00    .5141400+00    .8577100+00 .6593800+00    .7518100+00
   .7833300+00    .6216100+00
   .1221400+01    .1000000+01    .1986700+00 .9800700+00    .3894200+00
   .9210600+00    .5646400+00    .8253400+00 .7173600+00    .6967100+00
   .8414700+00    .5403000+00
   .1246080+01    .1000000+01    .2182300+00 .9759000+00    .4259400+00
   .9047500+00    .6131200+00    .7899900+00 .7707400+00    .6371500+00
   .8912100+00    .4535000+00
   .1271250+01    .1000000+01    .2377000+00 .9713400+00    .4617800+00
   .8869900+00    .6593800+00    .7518100+00 .8191900+00    .5735200+00
   .9320400+00    .3623600+00
   .1296930+01    .1000000+01    .2570800+00 .9663900+00    .4968800+00
   .8678200+00    .7032800+00    .7109100+00 .8624000+00    .5062200+00
   .9635600+00    .2675000+00
   .1323130+01    .1000000+01    .2763600+00 .9610600+00    .5311900+00
   .8472600+00    .7446400+00    .6674600+00 .9001000+00    .4356800+00
   .9854500+00    .1699700+00
   .1349860+01    .1000000+01    .2955200+00 .9553400+00    .5646400+00
   .8253400+00    .7833300+00    .6216100+00 .9320400+00    .3623600+00
   .9974900+00    .7074000-01
   .1377130+01    .1000000+01    .3145700+00 .9492400+00    .5972000+00
   .8021000+00    .8191900+00    .5735200+00 .9580200+00    .2867200+00
   .9995700+00   -.2920000-01
   .1404950+01    .1000000+01    .3334900+00 .9427500+00    .6297900+00
   .7775700+00    .8521100+00    .5233700+00 .9778600+00    .2092400+00
   .9916600+00   -.1288400+00
   .1433330+01    .1000000+01    .3522700+00 .9359000+00    .6593800+00
```

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 .7518100+00   .8819600+00   .4713300+00   .9914600+00   .1304200+00
 .9738500+00  -.2272000+00
 .1462280+01   .1000000+01   .3709200+00   .9286600+00   .6889200+00
 .7248400+00   .9086300+00   .4175900+00   .9987100+00   .5077000-01
 .9463000+00  -.3232900+00
 .1491820+01   .1000000+01   .3894200+00   .9210600+00   .7173600+00
 .6967100+00   .9320400+00   .3623600+00   .9995700+00  -.2920000-01
 .9093000+00  -.4161500+00
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 .6674600+00   .9520900+00   .3058200+00   .9940400+00  -.1089900+00
 .8632100+00  -.5048500+00
 .1552710+01   .1000000+01   .4259400+00   .9047500+00   .7707400+00
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 .6058200+00   .9818500+00   .1896400+00   .9639800+00  -.2659600+00
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 .5735200+00   .9914600+00   .1304200+00   .9396500+00  -.3421500+00
 .6754600+00  -.7373900+00
 .1648720+01   .1000000+01   .4794300+00   .8775800+00   .8414700+00
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 .5984700+00  -.8011400+00
 .1648720+01   .1000000+01   .4968800+00   .8678200+00   .8624000+00
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 .1648720+01   .1000000+01   .5141400+00   .8577100+00   .8819600+00
 .4713300+00   .9987900+00  -.4918000-01   .8313800+00  -.5557000+00
 .4273800+00  -.9040700+00
 .1648720+01   .1000000+01   .5311900+00   .8472600+00   .9001000+00
 .4356800+00   .9940400+00  -.1089900+00   .7843200+00  -.6203600+00
 .3349900+00  -.9422200+00
 .1648720+01   .1000000+01   .5480200+00   .8364600+00   .9168000+00
 .3993400+00   .9857200+00  -.1684000+00   .7322300+00  -.6810600+00
 .2392500+00  -.9709600+00
 .1648720+01   .1000000+01   .5646400+00   .8252400+00   .9320400+00
 .3623600+00   .9738500+00  -.2272000+00   .6754600+00  -.7373900+00
 .1411200+00  -.9899900+00
 .1648720+01   .1000000+01   .5810400+00   .8138800+00   .9457300+00
 .3248000+00   .9584700+00  -.2851900+00   .6143700+00  -.7890100+00
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-.5837000-01  -.9982900+00
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 .2481800+00   .9174400+00  -.3978800+00   .4808200+00  -.8768200+00
-.1577500+00  -.9874800+00
 .1648720+01   .1000000+01   .6287900+00   .7775700+00   .9778600+00
 .2092400+00   .8919300+00  -.4521300+00   .4092100+00  -.9124400+00
-.2555400+00  -.9668000+00
 .1648720+01   .1000000+01   .6442200+00   .7648400+00   .9854500+00
 .1699700+00   .8632100+00  -.5048500+00   .3349900+00  -.9422200+00
-.3507800+00  -.9364600+00
 .1648720+01   .1000000+01   .6593800+00   .7518100+00   .9914600+00
 .1304200+00   .8313800+00  -.5557000+00   .2580200+00  -.9659300+00
-.4425200+00  -.8967600+00
 .1648720+01   .1000000+01   .6742900+00   .7384700+00   .9958600+00
 .9067000-01   .7965700+00  -.6045500+00   .1806000+00  -.9835600+00
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 .5077000-01    .7588800+00   -.6512300+00    .1014200+00   -.9943400+00
-.6118600+00   -.7909700+00
 .1648720+01    .1000000+01    .7032800+00    .7109100+00    .9999400+00
 .1080000-01    .7184600+00   -.6955600+00    .2159000-01   -.9997700+00
-.6877700+00   -.7259300+00
 .1648720+01    .1000000+01    .7173600+00    .6967100+00    .9995700+00
-.2920000-01    .6754600+00   -.7373900+00   -.5837000-01   -.9982900+00
-.7568000+00   -.6536400+00
 .1648720+01    .1000000+01    .7311500+00    .6822200+00    .9976100+00
-.6915000-01    .6300300+00   -.7765700+00   -.1379700+00   -.9904400+00
-.8182800+00   -.5748200+00
 .1648720+01    .1000000+01    .7446400+00    .6674600+00    .9940400+00
-.1089900+00    .5823300+00   -.8129500+00   -.2166800+00   -.9762400+00
-.8715800+00   -.4902600+00
 .1648720+01    .1000000+01    .7578400+00    .6524400+00    .9883900+00
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-.9161700+00   -.4008000+00
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-.1880800+00    .4808200+00   -.8768200+00   -.3694400+00   -.9292500+00
-.9516000+00   -.3073300+00
 .1648720+01    .1000000+01    .7833300+00    .6216100+00    .9738500+00
-.2272000+00    .4273800+00   -.9040700+00   -.4425200+00   -.8967600+00
-.9775300+00   -.2108000+00
 .1648720+01    .1000000+01    .7956000+00    .6058200+00    .9639800+00
-.2659600+00    .3724000+00   -.9280700+00   -.5127700+00   -.8585300+00
-.9936900+00   -.1121500+00
 .1648720+01    .1000000+01    .8075600+00    .5897900+00    .9525800+00
-.3043000+00    .3160800+00   -.9487300+00   -.5797400+00   -.8148000+00
-.9999200+00   -.1239000-01
 .1648720+01    .1000000+01    .8191900+00    .5735200+00    .9396500+00
-.3421500+00    .2586200+00   -.9659800+00   -.6430000+00   -.7658700+00
-.9961600+00    .8750000-01
 .1648720+01    .1000000+01    .8305000+00    .5570200+00    .9252100+00
-.3794500+00    .2002300+00   -.9797500+00   -.7021500+00   -.7120300+00
-.9824500+00    .1865100+00
 .1648720+01    .1000000+01    .8414700+00    .5403000+00    .9093000+00
-.4161500+00    .1411200+00   -.9899900+00   -.7568000+00   -.6536400+00
-.9589200+00    .2836600+00
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```
HP23 : TRIGONOMETRIC APPROXIMATION PROBLEM
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   .1000000+01    .0000000       .1000000+01 .0000000       .1000000+01
   .0000000       .1000000+01
   .1010050+01    .1000000+01    .1000000-01 .9999500+00    .2000000-01
   .9998000+00    .3000000-01    .9995500+00 .3999000-01    .9992000+00
   .4998000-01    .9987500+00
   .1020200+01    .1000000+01    .2000000-01 .9998000+00    .3999000-01
   .9992000+00    .5996000-01    .9982000+00 .7991000-01    .9968000+00
   .9983000-01    .9950000+00
   .1030450+01    .1000000+01    .3000000-01 .9995500+00    .5996000-01
   .9982000+00    .8988000-01    .9959500+00 .1197100+00    .9928100+00
   .1494400+00    .9887700+00
   .1040810+01    .1000000+01    .3999000-01 .9992000+00    .7991000-01
   .9968000+00    .1197100+00    .9928100+00 .1593200+00    .9872300+00
   .1986700+00    .9800700+00
   .1051270+01    .1000000+01    .4998000-01 .9987500+00    .5983000-01
   .9950000+00    .1494400+00    .9887700+00 .1986700+00    .9800700+00
   .2474000+00    .9689100+00
   .1061840+01    .1000000+01    .5996000-01 .9982000+00    .1197100+00
   .9928100+00    .1790300+00    .9838400+00 .2377000+00    .9713400+00
   .2955200+00    .9553400+00
   .1072510+01    .1000000+01    .6994000-01 .9975500+00    .1395400+00
   .9902200+00    .2084600+00    .9780300+00 .2763600+00    .9610600+00
   .3429000+00    .9393700+00
   .1083290+01    .1000000+01    .7991000-01 .9968000+00    .1593200+00
   .9872300+00    .2377000+00    .9713400+00 .3145700+00    .9492400+00
   .3394200+00    .9210600+00
   .1094170+01    .1000000+01    .8988000-01 .9959500+00    .1790300+00
   .9838400+00    .2667300+00    .9637700+00 .3522700+00    .9359000+00
   .4349700+00    .9004500+00
   .1105170+01    .1000000+01    .9983000-01 .9950000+00    .1986700+00
   .9800700+00    .2955200+00    .9553400+00 .3894200+00    .9210600+00
   .4794300+00    .8775800+00
   .1116280+01    .1000000+01    .1097800+00 .9939600+00    .2182300+00
   .9759000+00    .3240400+00    .9460400+00 .4259400+00    .9047500+00
   .5226900+00    .8523200+00
   .1127500+01    .1000000+01    .1197100+00 .9928100+00    .2377000+00
   .9713400+00    .3522700+00    .9359000+00 .4617800+00    .8869900+00
   .5646400+00    .8253400+00
   .1138830+01    .1000000+01    .1296300+00 .9915600+00    .2570800+00
   .9663900+00    .3801900+00    .9249100+00 .4968800+00    .8678200+00
   .6051900+00    .7960800+00
   .1150270+01    .1000000+01    .1395400+00 .9902200+00    .2763600+00
   .9610600+00    .4077600+00    .9130900+00 .5311900+00    .8472600+00
   .6442200+00    .7648400+00
   .1161830+01    .1000000+01    .1494400+00 .9887700+00    .2955200+00
   .9553400+00    .4349700+00    .9004500+00 .5646400+00    .8253400+00
   .6816400+00    .7316900+00
   .1173510+01    .1000000+01    .1593200+00 .9872300+00    .3145700+00
   .9492400+00    .4617800+00    .8869900+00 .5972000+00    .8021000+00
   .7173600+00    .6967100+00
   .1185300+01    .1000000+01    .1691800+00 .9855800+00    .3334900+00
   .9427500+00    .4881800+00    .8727400+00 .6287900+00    .7775700+00
   .7512800+00    .6599800+00
   .1197220+01    .1000000+01    .1790300+00 .9838400+00    .3522700+00
```

.9359000+00	.5141400+00	.8577100+00	.6593800+00	.7518100+00
.7833300+00	.6216100+00			
.1209250+01	.1000000+01	.1888600+00	.9820000+00	.3709200+00
.9286600+00	.5396300+00	.8419000+00	.6889200+00	.7248400+00
.8134200+00	.5816800+00			
.1221400+01	.1000000+01	.1986700+00	.9800700+00	.3894200+00
.9210600+00	.5646400+00	.8253400+00	.7173600+00	.6967100+00
.8414700+00	.5403000+00			
.1233680+01	.1000000+01	.2084600+00	.9780300+00	.4077600+00
.9130900+00	.5891400+00	.8080300+00	.7446400+00	.6674600+00
.8674200+00	.4975700+00			
.1246080+01	.1000000+01	.2182300+00	.9759000+00	.4259400+00
.9047500+00	.6131200+00	.7899900+00	.7707400+00	.6371500+00
.8912100+00	.4536000+00			
.1258600+01	.1000000+01	.2279800+00	.9736700+00	.4439600+00
.8960500+00	.6365400+00	.7712500+00	.7956000+00	.6058200+00
.9127600+00	.4084900+00			
.1271250+01	.1000000+01	.2377000+00	.9713400+00	.4617800+00
.8869900+00	.6593800+00	.7518100+00	.8191900+00	.5735200+00
.9320400+00	.3623600+00			
.1284030+01	.1000000+01	.2474000+00	.9689100+00	.4794300+00
.8775800+00	.6816400+00	.7316900+00	.8414700+00	.5403000+00
.9489800+00	.3153200+00			
.1296930+01	.1000000+01	.2570800+00	.9663900+00	.4968800+00
.8678200+00	.7032800+00	.7109100+00	.8624000+00	.5062200+00
.9635600+00	.2675000+00			
.1309960+01	.1000000+01	.2667300+00	.9637700+00	.5141400+00
.8577100+00	.7242900+00	.6895000+00	.8819600+00	.4713300+00
.9757200+00	.2190100+00			
.1323130+01	.1000000+01	.2763600+00	.9610600+00	.5311900+00
.8472600+00	.7446400+00	.6674600+00	.9001000+00	.4356900+00
.9854500+00	.1699700+00			
.1336430+01	.1000000+01	.2859500+00	.9582400+00	.5480200+00
.8364600+00	.7643300+00	.6448300+00	.9165000+00	.3993400+00
.9927100+00	.1205000+00			
.1349860+01	.1000000+01	.2955200+00	.9553400+00	.5646400+00
.8253400+00	.7833300+00	.6216100+00	.9320400+00	.3623600+00
.9974900+00	.7074000-01			
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.8138800+00	.8016200+00	.5978300+00	.9457800+00	.3248000+00
.9997800+00	.2079000-01			
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.8021000+00	.8191900+00	.5735200+00	.9580200+00	.2867200+00
.9995700+00	-.2920000-01			
.1390970+01	.1000000+01	.3240400+00	.9460400+00	.6131200+00
.7899900+00	.8360300+00	.5486900+00	.9687200+00	.2481800+00
.9968700+00	-.7912000-01			
.1404950+01	.1000000+01	.3334900+00	.9427500+00	.6287900+00
.7775700+00	.8521100+00	.5233700+00	.9778600+00	.2092400+00
.9916600+00	-.1288400+00			
.1419070+01	.1000000+01	.3429000+00	.9393700+00	.6442200+00
.7648400+00	.8674200+00	.4975700+00	.9854500+00	.1699700+00
.9839900+00	-.1782500+00			
.1433330+01	.1000000+01	.3522700+00	.9359000+00	.6593800+00
.7518100+00	.8819600+00	.4713300+00	.9914600+00	.1304200+00
.9738500+00	-.2272000+00			
.1447730+01	.1000000+01	.3616200+00	.9323300+00	.6742900+00
.7384700+00	.8957000+00	.4446600+00	.9958800+00	.9067000-01

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.1462280+01    .1000000+01    .3709200+00    .9286600+00    .6889200+00
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.9460400+00	.4750300+00	.8799700+00	.6131200+00	.7899900+00
.7345500+00	.6785600+00			
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.9427500+00	.4881800+00	.8727400+00	.6287900+00	.7775700+00
.7512300+00	.6599800+00			
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.9393700+00	.5012100+00	.8653200+00	.6442200+00	.7648400+00
.7675400+00	.6410000+00			
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.9359000+00	.5141400+00	.8577100+00	.6593800+00	.7518100+00
.7833300+00	.6216100+00			
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.9323300+00	.5269400+00	.8499000+00	.6742900+00	.7384700+00

.7986200+00	.6018300+00			
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.9286600+00	.5396300+00	.8419000+00	.6889200+00	.7248400+00
.8134200+00	.5816800+00			
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.9249100+00	.5522000+00	.8337100+00	.7032800+00	.7109100+00
.8277000+00	.5611700+00			
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.9210600+00	.5646400+00	.8253400+00	.7173600+00	.6967100+00
.8414700+00	.5403000+00			
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.9171200+00	.5769600+00	.8157700+00	.7311500+00	.6822200+00
.8547100+00	.5191000+00			
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.3058200+00	.9494900+00	-.3138100+00	.5823300+00	-.8129500+00
-.9410000-02	-.9999600+00			
.1648720+01	.1000000+01	.5931800+00	.8050700+00	.9551000+00
.2962800+00	.9446700+00	-.3280200+00	.5659600+00	-.8244400+00
-.3340000-01	-.9994400+00			
.1648720+01	.1000000+01	.5972000+00	.8021000+00	.9580200+00
.2867200+00	.9396500+00	-.3421500+00	.5493600+00	-.8355900+00
-.5837000-01	-.9982900+00			
.1648720+01	.1000000+01	.6012000+00	.7991000+00	.9608400+00
.2771200+00	.9344100+00	-.3562100+00	.5325300+00	-.8464100+00
-.8331000-01	-.9965200+00			
.1648720+01	.1000000+01	.6051900+00	.7960800+00	.9635600+00
.2675000+00	.9289600+00	-.3701800+00	.5155000+00	-.8568900+00
-.1082000+00	-.9941300+00			
.1648720+01	.1000000+01	.6091500+00	.7930500+00	.9661800+00
.2578500+00	.9233000+00	-.3840700+00	.4982600+00	-.8670300+00
-.1330100+00	-.9911100+00			
.1648720+01	.1000000+01	.6131200+00	.7899900+00	.9687200+00
.2481800+00	.9174400+00	-.3978800+00	.4808200+00	-.8768200+00
-.1577500+00	-.9874800+00			
.1648720+01	.1000000+01	.6170600+00	.7869200+00	.9711500+00
.2384800+00	.9113700+00	-.4116000+00	.4631900+00	-.8862600+00
-.1823800+00	-.9832300+00			
.1648720+01	.1000000+01	.6209900+00	.7838200+00	.9734800+00

.2287500+00	.9050900+00	-.4252200+00	.4453700+00	-.8953400+00
-.2069000+00	-.9783600+00			
.1648720+01	.1000000+01	.6249000+00	.7807100+00	.9757200+00
.2190100+00	.8986100+00	-.4387500+00	.4273800+00	-.9040700+00
-.2312900+00	-.9728800+00			
.1648720+01	.1000000+01	.6287900+00	.7775700+00	.9778600+00
.2092400+00	.8919300+00	-.4521800+00	.4092100+00	-.9124400+00
-.2555400+00	-.9668000+00			
.1648720+01	.1000000+01	.6326700+00	.7744200+00	.9799100+00
.1994500+00	.8850500+00	-.4655000+00	.3908800+00	-.9204400+00
-.2796300+00	-.9601100+00			
.1648720+01	.1000000+01	.6365400+00	.7712500+00	.9818500+00
.1896400+00	.8779600+00	-.4787300+00	.3724000+00	-.9280700+00
-.3035400+00	-.9528200+00			
.1648720+01	.1000000+01	.6403900+00	.7680500+00	.9837000+00
.1798100+00	.8706800+00	-.4918400+00	.3537600+00	-.9353300+00
-.3272600+00	-.9449300+00			
.1648720+01	.1000000+01	.6442200+00	.7648400+00	.9854500+00
.1699700+00	.8632100+00	-.5048500+00	.3349900+00	-.9422200+00
-.3507800+00	-.9364600+00			
.1648720+01	.1000000+01	.6480300+00	.7616100+00	.9871000+00
.1601000+00	.8555400+00	-.5177400+00	.3160800+00	-.9487300+00
-.3740800+00	-.9274000+00			
.1648720+01	.1000000+01	.6518300+00	.7583600+00	.9886500+00
.1502300+00	.8476800+00	-.5305100+00	.2970400+00	-.9548600+00
-.3971500+00	-.9177500+00			
.1648720+01	.1000000+01	.6556200+00	.7550900+00	.9901000+00
.1403300+00	.8396300+00	-.5431700+00	.2778900+00	-.9606100+00
-.4199700+00	-.9075400+00			
.1648720+01	.1000000+01	.6593800+00	.7518100+00	.9914600+00
.1304200+00	.8313800+00	-.5557000+00	.2586200+00	-.9659800+00
-.4425200+00	-.8967600+00			
.1648720+01	.1000000+01	.6631400+00	.7485000+00	.9927100+00
.1205000+00	.8229500+00	-.5681100+00	.2392500+00	-.9709600+00
-.4648000+00	-.8854200+00			
.1648720+01	.1000000+01	.6668700+00	.7451700+00	.9938700+00
.1105700+00	.8143400+00	-.5803900+00	.2197800+00	-.9755500+00
-.4867900+00	-.8735200+00			
.1648720+01	.1000000+01	.6705900+00	.7418300+00	.9949200+00
.1006300+00	.8055400+00	-.5925400+00	.2002300+00	-.9797500+00
-.5084700+00	-.8610800+00			
.1648720+01	.1000000+01	.6742900+00	.7384700+00	.9958800+00
.9067000-01	.7965700+00	-.6045500+00	.1806000+00	-.9835600+00
-.5298400+00	-.8481000+00			
.1648720+01	.1000000+01	.6779700+00	.7350900+00	.9967400+00
.8071000-01	.7874100+00	-.6164300+00	.1608900+00	-.9869700+00
-.5508700+00	-.8345900+00			
.1648720+01	.1000000+01	.6816400+00	.7316900+00	.9974900+00
.7074000-01	.7780700+00	-.6281700+00	.1411200+00	-.9899900+00
-.5715600+00	-.8205600+00			
.1648720+01	.1000000+01	.6852900+00	.7282700+00	.9981500+00
.6076000-01	.7685600+00	-.6397700+00	.1212900+00	-.9926200+00
-.5918900+00	-.8060200+00			
.1648720+01	.1000000+01	.6889200+00	.7248400+00	.9987100+00
.5077000-01	.7588800+00	-.6512300+00	.1014200+00	-.9948400+00
-.6118600+00	-.7909700+00			
.1648720+01	.1000000+01	.6925400+00	.7213800+00	.9991700+00
.4079000-01	.7490300+00	-.6625400+00	.8150000-01	-.9966700+00

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-.6314400+00   -.7754300+00
 .1648720+01    .1000000+01    .6961400+00    .7179100+00    .9995300+00
 .3079000-01    .7390100+00   -.6737000+00    .6155000-01   -.9981000+00
-.6506300+00   -.7594000+00
 .1648720+01    .1000000+01    .6997200+00    .7144200+00    .9997800+00
 .2079000-01    .7288200+00   -.6847100+00    .4158000-01   -.9991400+00
-.6694000+00   -.7429000+00
 .1648720+01    .1000000+01    .7032800+00    .7109100+00    .9999400+00
 .1080000-01    .7184600+00   -.6955600+00    .2159000-01   -.9997700+00
-.6877700+00   -.7259300+00
 .1648720+01    .1000000+01    .7068300+00    .7073900+00    .1000000+01
 .8000000-03    .7079500+00   -.7062600+00    .1590000-02   -.1000000+01
-.7057000+00   -.7085100+00
 .1648720+01    .1000000+01    .7103500+00    .7038500+00    .9999600+00
-.9200000-02    .6972800+00   -.7168000+00   -.1841000-01   -.9998300+00
-.7231900+00   -.6906500+00
 .1648720+01    .1000000+01    .7138600+00    .7002800+00    .9998200+00
-.1920000-01    .6864500+00   -.7271800+00   -.3840000-01   -.9992600+00
-.7402300+00   -.6723600+00
 .1648720+01    .1000000+01    .7173600+00    .6967100+00    .9995700+00
-.2920000-01    .6754600+00   -.7373900+00   -.5837000-01   -.9982900+00
-.7568000+00   -.6536400+00
 .1648720+01    .1000000+01    .7208300+00    .6931100+00    .9992300+00
-.3919000-01    .6643300+00   -.7474400+00   -.7833000-01   -.9969300+00
-.7729100+00   -.6345200+00
 .1648720+01    .1000000+01    .7242900+00    .6895000+00    .9987900+00
-.4918000-01    .6530400+00   -.7573200+00   -.9825000-01   -.9951600+00
-.7885300+00   -.6150000+00
 .1648720+01    .1000000+01    .7277300+00    .6858700+00    .9982500+00
-.5917000-01    .6416100+00   -.7670300+00   -.1181300+00   -.9930000+00
-.8036500+00   -.5951000+00
 .1648720+01    .1000000+01    .7311500+00    .6822200+00    .9976100+00
-.6915000-01    .6300300+00   -.7765700+00   -.1379700+00   -.9904400+00
-.8182800+00   -.5748200+00
 .1648720+01    .1000000+01    .7345500+00    .6785600+00    .9968700+00
-.7912000-01    .6183100+00   -.7859300+00   -.1577500+00   -.9874800+00
-.8323900+00   -.5541900+00
 .1648720+01    .1000000+01    .7379300+00    .6748800+00    .9960200+00
-.8909000-01    .6064500+00   -.7951200+00   -.1774600+00   -.9841300+00
-.8459800+00   -.5332100+00
 .1648720+01    .1000000+01    .7413000+00    .6711800+00    .9950900+00
-.9904000-01    .5944600+00   -.8041300+00   -.1971100+00   -.9803400+00
-.8590500+00   -.5118900+00
 .1648720+01    .1000000+01    .7446400+00    .6674600+00    .9940400+00
-.1089900+00    .5823300+00   -.8129500+00   -.2166800+00   -.9762400+00
-.8715800+00   -.4902600+00
 .1648720+01    .1000000+01    .7479700+00    .6637300+00    .9929000+00
-.1189200+00    .5700700+00   -.8216000+00   -.2361600+00   -.9717200+00
-.8835600+00   -.4683200+00
 .1648720+01    .1000000+01    .7512800+00    .6599800+00    .9916600+00
-.1288400+00    .5576800+00   -.8300500+00   -.2555400+00   -.9668000+00
-.8949900+00   -.4460900+00
 .1648720+01    .1000000+01    .7545700+00    .6562200+00    .9903300+00
-.1387500+00    .5451700+00   -.8383300+00   -.2748200+00   -.9614000+00
-.9058600+00   -.4235800+00
 .1648720+01    .1000000+01    .7578400+00    .6524400+00    .9888900+00
-.1486500+00    .5325300+00   -.8464100+00   -.2940000+00   -.9558100+00
-.9161700+00   -.4008000+00
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 .1648720+01    .1000000+01    .7611000+00    .6486400+00    .9873500+00
-.1585300+00    .5197800+00   -.8543000+00   -.3130500+00   -.9497400+00
-.9259000+00   -.3777700+00
 .1648720+01    .1000000+01    .7643300+00    .6448300+00    .9857200+00
-.1684000+00    .5069100+00   -.8620000+00   -.3319900+00   -.9432800+00
-.9350500+00   -.3545100+00
 .1648720+01    .1000000+01    .7675400+00    .6410000+00    .9839900+00
-.1782500+00    .4939200+00   -.8695100+00   -.3507800+00   -.9364600+00
-.9436200+00   -.3310200+00
 .1648720+01    .1000000+01    .7707400+00    .6371500+00    .9821500+00
-.1880800+00    .4808200+00   -.8768200+00   -.3694400+00   -.9292500+00
-.9516000+00   -.3073300+00
 .1648720+01    .1000000+01    .7739100+00    .6332900+00    .9802200+00
-.1978900+00    .4676200+00   -.8839300+00   -.3879500+00   -.9216800+00
-.9589900+00   -.2834500+00
 .1648720+01    .1000000+01    .7770700+00    .6294100+00    .9782000+00
-.2076800+00    .4543100+00   -.8908500+00   -.4063100+00   -.9137400+00
-.9657700+00   -.2593900+00
 .1648720+01    .1000000+01    .7802100+00    .6255200+00    .9760700+00
-.2174500+00    .4408900+00   -.8975600+00   -.4245000+00   -.9054300+00
-.9719600+00   -.2351700+00
 .1648720+01    .1000000+01    .7833300+00    .6216100+00    .9738500+00
-.2272000+00    .4273800+00   -.9040700+00   -.4425200+00   -.8967600+00
-.9775300+00   -.2108000+00
 .1648720+01    .1000000+01    .7864300+00    .6176900+00    .9715300+00
-.2369300+00    .4137700+00   -.9103800+00   -.4603700+00   -.8877300+00
-.9824900+00   -.1862900+00
 .1648720+01    .1000000+01    .7895000+00    .6137500+00    .9691100+00
-.2466300+00    .4000700+00   -.9164800+00   -.4780300+00   -.8783500+00
-.9868400+00   -.1616800+00
 .1648720+01    .1000000+01    .7925600+00    .6097900+00    .9665900+00
-.2563100+00    .3862800+00   -.9223800+00   -.4955000+00   -.8686100+00
-.9905800+00   -.1369600+00
 .1648720+01    .1000000+01    .7956000+00    .6058200+00    .9639800+00
-.2659600+00    .3724000+00   -.9280700+00   -.5127700+00   -.8585300+00
-.9936900+00   -.1121500+00
 .1648720+01    .1000000+01    .7986200+00    .6018300+00    .9612800+00
-.2755900+00    .3584400+00   -.9335500+00   -.5298400+00   -.8481000+00
-.9961800+00   -.8728000-01
 .1648720+01    .1000000+01    .8016200+00    .5978300+00    .9584700+00
-.2851900+00    .3443900+00   -.9388300+00   -.5466900+00   -.8373300+00
-.9980500+00   -.6235000-01
 .1648720+01    .1000000+01    .8046000+00    .5938200+00    .9555700+00
-.2947600+00    .3302700+00   -.9438900+00   -.5633300+00   -.8262300+00
-.9993000+00   -.3738000-01
 .1648720+01    .1000000+01    .8075600+00    .5897900+00    .9525800+00
-.3043000+00    .3160800+00   -.9487300+00   -.5797400+00   -.8148000+00
-.9999200+00   -.1239000-01
 .1648720+01    .1000000+01    .8105000+00    .5857400+00    .9494900+00
-.3138100+00    .3018100+00   -.9533700+00   -.5959200+00   -.8030500+00
-.9999200+00    .1261000-01
 .1648720+01    .1000000+01    .8134200+00    .5816800+00    .9463000+00
-.3232900+00    .2874800+00   -.9577900+00   -.6118600+00   -.7909700+00
-.9992900+00    .3760000-01
 .1648720+01    .1000000+01    .8163100+00    .5776100+00    .9430200+00
-.3327400+00    .2730800+00   -.9619900+00   -.6275500+00   -.7785700+00
-.9980400+00    .6257000-01
 .1648720+01    .1000000+01    .8191900+00    .5735200+00    .9396500+00
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-.3421500+00     .2586200+00    -.9659800+00    -.6430000+00    -.7658700+00
-.9961600+00     .8750000-01
 .1648720+01     .1000000+01     .8220500+00     .5694200+00     .9361800+00
-.3515300+00     .2441000+00    -.9697500+00    -.6581900+00    -.7528500+00
-.9936700+00     .1123700+00
 .1648720+01     .1000000+01     .8248900+00     .5653000+00     .9326200+00
-.3608700+00     .2295300+00    -.9733000+00    -.6731100+00    -.7395400+00
-.9905500+00     .1371800+00
 .1648720+01     .1000000+01     .8277000+00     .5611700+00     .9289600+00
-.3701800+00     .2149000+00    -.9766400+00    -.6877700+00    -.7259300+00
-.9868100+00     .1619000+00
 .1648720+01     .1000000+01     .8305000+00     .5570200+00     .9252100+00
-.3794500+00     .2002300+00    -.9797500+00    -.7021500+00    -.7120300+00
-.9824500+00     .1865100+00
 .1648720+01     .1000000+01     .8332700+00     .5528600+00     .9213700+00
-.3886800+00     .1855100+00    -.9826400+00    -.7162500+00    -.6978500+00
-.9774800+00     .2110100+00
 .1648720+01     .1000000+01     .8360300+00     .5486900+00     .9174400+00
-.3978800+00     .1707500+00    -.9853100+00    -.7300600+00    -.6833800+00
-.9719000+00     .2353800+00
 .1648720+01     .1000000+01     .8387600+00     .5445000+00     .9134100+00
-.4070300+00     .1559500+00    -.9877600+00    -.7435800+00    -.6686500+00
-.9657200+00     .2596000+00
 .1648720+01     .1000000+01     .8414700+00     .5403000+00     .9093000+00
-.4161500+00     .1411200+00    -.9899900+00    -.7568000+00    -.6536400+00
-.9589200+00     .2836600+00
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HP25 : GENERAL DATA FITTING PROBLEM
  15     5
   .7000000+01     .5000000+01     .3000000+01     .4000000+01     .1200000+02
   .4000000+01
   .4000000+01     .9000000+01     .7000000+01     .3000000+01     .1900000+02
   .1300000+02
   .2000000+01     .6000000+01     .6000000+01     .0000000        .1200000+02
   .1200000+02
   .7000000+01     .9000000+01     .9000000+01     .7000000+01     .2500000+02
   .1100000+02
   .7000000+01     .3000000+01     .0000000        .1000000+01     .4000000+01
   .2000000+01
   .7000000+01     .8000000+01     .1000000+01     .8000000+01     .1700000+02
   .1000000+01
   .3000000+01     .1000000+01     .9000000+01     .8000000+01     .1800000+02
   .2000000+01
   .3000000+01     .0000000        .9000000+01     .3000000+01     .1200000+02
   .6000000+01
   .5000000+01     .3000000+01     .1000000+01     .1000000+01     .5000000+01
   .3000000+01
   .1000000+01     .6000000+01     .7000000+01     .6000000+01     .1900000+02
   .7000000+01
   .4000000+01     .6000000+01     .1000000+01     .9000000+01     .1600000+02
  -.2000000+01
   .1000000+01     .0000000        .4000000+01     .8000000+01     .1200000+02
  -.4000000+01
   .6000000+01     .0000000        .5000000+01     .7000000+01     .1200000+02
  -.2000000+01
   .6000000+01     .7000000+01     .3000000+01     .2000000+01     .1200000+02
   .8000000+01
   .0000000        .5000000+01     .4000000+01     .9000000+01     .1300000+02
   .0000000
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HP26 : POLYNOMIAL APPROXIMATION PROBLEM
  51     5
  .0000000        .1000000+01     .0000000        .0000000        .0000000
  .0000000
  .2041000-01     .1000000+01     .2000000-01     .4000000-03     .1333333-04
  .0000000
  .4167000-01     .1000000+01     .4000000-01     .1600000-02     .6000000-04
  .0000000
  .6383000-01     .1000000+01     .6000000-01     .3600000-02     .2200000-03
  .1000000-04
  .8695000-01     .1000000+01     .8000000-01     .6400000-02     .5100000-03
  .4000000-04
  .1111000+00     .1000000+01     .1000000+00     .1000000-01     .1000000-02
  .1000000-03
  .1363400+00     .1000000+01     .1200000+00     .1440000-01     .1730000-02
  .2100000-03
  .1627300+00     .1000000+01     .1400000+00     .1960000-01     .2740000-02
  .3800000-03
  .1903500+00     .1000000+01     .1600000+00     .2560000-01     .4100000-02
  .6600000-03
  .2192800+00     .1000000+01     .1800000+00     .3240000-01     .5830000-02
  .1050000-02
  .2496000+00     .1000000+01     .2000000+00     .4000000-01     .8000000-02
  .1600000-02
  .2813900+00     .1000000+01     .2200000+00     .4840000-01     .1065000-01
  .2340000-02
  .3147400+00     .1000000+01     .2400000+00     .5760000-01     .1382000-01
  .3320000-02
  .3497500+00     .1000000+01     .2600000+00     .6760000-01     .1758000-01
  .4570000-02
  .3865000+00     .1000000+01     .2800000+00     .7840000-01     .2195000-01
  .6150000-02
  .4251000+00     .1000000+01     .3000000+00     .9000000-01     .2700000-01
  .8100000-02
  .4656500+00     .1000000+01     .3200000+00     .1024000+00     .3277000-01
  .1049000-01
  .5082700+00     .1000000+01     .3400000+00     .1156000+00     .3930000-01
  .1336000-01
  .5530500+00     .1000000+01     .3600000+00     .1296000+00     .4666000-01
  .1680000-01
  .6001200+00     .1000000+01     .3800000+00     .1444000+00     .5487000-01
  .2085000-01
  .6496000+00     .1000000+01     .4000000+00     .1600000+00     .6400000-01
  .2560000-01
  .7016000+00     .1000000+01     .4200000+00     .1764000+00     .7409000-01
  .3112000-01
  .7562600+00     .1000000+01     .4400000+00     .1936000+00     .8518000-01
  .3748000-01
  .8137100+00     .1000000+01     .4600000+00     .2116000+00     .9734000-01
  .4477000-01
  .8740800+00     .1000000+01     .4800000+00     .2304000+00     .1105900+00
  .5308000-01
  .9375000+00     .1000000+01     .5000000+00     .2500000+00     .1250000+00
  .6250000-01
  .1004120+01     .1000000+01     .5200000+00     .2704000+00     .1406100+00
  .7312000-01
  .1074090+01     .1000000+01     .5400000+00     .2916000+00     .1574000+00
```

.3503000-01				
.1147560+01	.1000000+01	.5600000+00	.3136000+00	.1756200+00
.9834000-01				
.1224630+01	.1000000+01	.5800000+00	.3364000+00	.1951100+00
.1131600+00				
.1305600+01	.1000000+01	.6000000+00	.3600000+00	.2160000+00
.1296000+00				
.1390490+01	.1000000+01	.6200000+00	.3844000+00	.2383300+00
.1477600+00				
.1479520+01	.1000000+01	.6400000+00	.4096000+00	.2621400+00
.1677700+00				
.1572840+01	.1000000+01	.6600000+00	.4356000+00	.2875000+00
.1897500+00				
.1670650+01	.1000000+01	.6800000+00	.4624000+00	.3144300+00
.2138100+00				
.1773100+01	.1000000+01	.7000000+00	.4900000+00	.3430000+00
.2401000+00				
.1880390+01	.1000000+01	.7200000+00	.5184000+00	.3732500+00
.2687400+00				
.1992690+01	.1000000+01	.7400000+00	.5476000+00	.4052200+00
.2998700+00				
.2110200+01	.1000000+01	.7600000+00	.5776000+00	.4389400+00
.3336200+00				
.2233100+01	.1000000+01	.7800000+00	.6084000+00	.4745500+00
.3701500+00				
.2361600+01	.1000000+01	.8000000+00	.6400000+00	.5120000+00
.4096000+00				
.2495890+01	.1000000+01	.8200000+00	.6724000+00	.5513700+00
.4521200+00				
.2636180+01	.1000000+01	.8400000+00	.7056000+00	.5927000+00
.4978700+00				
.2782660+01	.1000000+01	.8600000+00	.7396000+00	.6360600+00
.5470100+00				
.2935570+01	.1000000+01	.8800000+00	.7744000+00	.6814700+00
.5997000+00				
.3095100+01	.1000000+01	.9000000+00	.8100000+00	.7290000+00
.6561000+00				
.3261480+01	.1000000+01	.9200000+00	.8464000+00	.7786900+00
.7163900+00				
.8434930+01	.1000000+01	.9400000+00	.8836000+00	.8305800+00
.7807500+00				
.8615680+01	.1000000+01	.9600000+00	.9216000+00	.8847400+00
.8493500+00				
.8803960+01	.1000000+01	.9800000+00	.9604000+00	.9411900+00
.9223700+00				
.9000000+01	.1000000+01	.1000000+01	.1000000+01	.1000000+01
.1000000+01				

```
HP27 : SPLINE FITTING PROBLEM
  72     6
 .1180452+05    .2034383+04    .9382400+02   -.3822230+02    .3186200+01
-.1751000+00    .3900000-02
 .1229520+05    .1936340+04    .3893003+03   -.1581119+03    .1313000+02
-.7242000+00    .1610000-01
 .1015648+05    .1653324+04    .3334053+03   -.1354105+03    .1128770+02
-.6202000+00    .1380000-01
 .9076900+04    .1275226+04    .3300043+03   -.1337830+03    .1115200+02
-.6127000+00    .1360000-01
 .1058814+05    .1605440+04    .6183019+03   -.2494156+03    .2079100+02
-.1142400+01    .2540000-01
 .1163514+05    .1455832+04    .6309923+03   -.3515550+03    .2930520+02
-.1610200+01    .3580000-01
 .1469502+05    .1835520+04    .1110759+04   -.4432423+03    .3694810+02
-.2030100+01    .4510000-01
 .9194520+04    .1105723+04    .7605630+03   -.3021170+03    .2518410+02
-.1383700+01    .3070000-01
 .9801960+04    .1071834+04    .9328590+03   -.3666112+03    .3056030+02
-.1679100+01    .3730000-01
 .8655550+04    .8535277+03    .9203512+03   -.3570425+03    .2976260+02
-.1635300+01    .3630000-01
 .2394985+05    .2251158+04    .2586895+04   -.1034668+04    .8624860+02
-.4738900+01    .1053000+00
 .8273160+04    .7401918+03    .9748017+03   -.3723659+03    .3104900+02
-.1705500+01    .3790000-01
 .1226925+05    .9766060+03    .1555925+04   -.5835622+03    .4864500+02
-.2672800+01    .5940000-01
 .1278816+05    .8663801+03    .1816288+04   -.6586204+03    .5490180+02
-.3016600+01    .6700000-01
 .9497280+04    .5998172+03    .1375662+04   -.4923128+03    .4103860+02
-.2254900+01    .5010000-01
 .1283555+05    .7023817+03    .1929412+04   -.6701556+03    .5586340+02
-.3069400+01    .6820000-01
 .9621410+04    .4585076+03    .1508344+04   -.5057448+03    .4215830+02
-.2316400+01    .5150000-01
 .1292112+05    .5673120+03    .2046056+04   -.6724078+03    .5605110+02
-.3079700+01    .6840000-01
 .1495490+05    .6586396+03    .2375436+04   -.7806540+03    .6507440+02
-.3575500+01    .7950000-01
 .1239504+05    .5028880+03    .1990679+04   -.6400552+03    .5335420+02
-.2931600+01    .6510000-01
 .1205200+05    .4137958+03    .1985283+04   -.6069558+03    .5059510+02
-.2780000+01    .6180000-01
 .9295520+04    .2664141+03    .1565237+04   -.4501595+03    .3752470+02
-.2061800+01    .4580000-01
 .2143764+05    .5553785+03    .3630698+04   -.1007553+04    .8398840+02
-.4614700+01    .1025000+00
 .1210638+05    .2804619+03    .2048936+04   -.5463982+03    .4554710+02
-.2502600+01    .5560000-01
 .1956311+05    .3570743+03    .3316434+04   -.8039215+03    .6701390+02
-.3682100+01    .8180000-01
 .2009748+05    .2755630+03    .3360025+04   -.7193291+03    .5996240+02
-.3294600+01    .7320000-01
 .1620372+05    .1899020+03    .2699596+04   -.5347814+03    .4457870+02
-.2449400+01    .5440000-01
 .1682500+05    .1663428+03    .2799749+04   -.5060059+03    .4218000+02
```

-.2317600+01	.5150000-01			
.1653760+05	.1055792+03	.2673644+04	-.3769573+03	.3142270+02
-.1726500+01	.3840000-01			
.1504800+05	.5174210+02	.2349345+04	-.2188496+03	.1824300+02
-.1002400+01	.2230000-01			
.3437580+05	.7378180+02	.5222543+04	-.3412426+03	.2844550+02
-.1562900+01	.3470000-01			
.1416492+05	.1425960+02	.2096400+04	-.7236770+02	.6032500+01
-.3315000+00	.7400000-02			
.2125410+05	-.5913940+02	.2649032+04	.4928729+03	-.3099950+02
.2192800+01	-.4370000-01			
.2024304+05	-.5624550+02	.2519408+04	.4687554+03	-.2953660+02
.2085500+01	-.4630000-01			
.1816080+05	-.7174870+02	.1587457+04	.1135118+04	-.7908500+02
.4345300+01	-.9660000-01			
.1282688+05	-.5074770+02	.1122812+04	.8028668+03	-.5593670+02
.3073400+01	-.6830000-01			
.3203517+05	-.9101250+02	.1534876+04	.3291653+04	-.1611762+03
.8855800+01	-.1968000+00			
.1739164+05	-.4274410+02	.7014494+03	.1847979+04	-.8209500+02
.4510700+01	-.1002000+00			
.2154000+05	-.1469470+02	.2221545+03	.2833776+04	-.4357600+02
.2394300+01	-.5320000-01			
.1222593+05	.1365890+02	-.2048839+03	.1814639+04	.7136720+02
-.3867500+01	.8590000-01			
.1247792+05	.2165200+02	-.3247789+03	.1880051+04	.1445570+03
-.7650500+01	.1700000+00			
.2013919+05	.4485160+02	-.6727730+03	.3071606+04	.3761636+03
-.1927640+02	.4284000+00			
.1412216+05	.3524690+02	-.5237021+03	.2067613+04	.3675344+03
-.1809370+02	.4021000+00			
.3395560+04	.9217900+01	-.1382675+03	.4846213+03	.1188819+03
-.5577400+01	.1239000+00			
.1323135+05	.3567250+02	-.5350863+03	.1875453+04	.4600653+03
-.2158420+02	.4796000+00			
.1359760+05	.3701720+02	-.5552561+03	.1793864+04	.5899157+03
-.2614190+02	.5809000+00			
.1156657+05	.3152110+02	-.4728143+03	.1434865+04	.6226495+03
-.2579390+02	.5732000+00			
.1490000+05	.3767550+02	-.5651302+03	.1632837+04	.9293654+03
-.3553670+02	.7897000+00			
.1271574+05	.2980140+02	-.4470182+03	.1242169+04	.9296153+03
-.3228450+02	.7174000+00			
.1200816+05	.2084730+02	-.3127673+03	.8218080+03	.1113030+04
-.2963620+02	.6586000+00			
.8039680+04	.8545700+01	-.1281844+03	.3257405+03	.9515037+03
-.1596620+02	.3548000+00			
.9798560+04	.2353100+01	-.3529650+02	.8833290+02	.1253329+04
-.5849000+01	.1300000+00			
.1099380+05	.2636600+01	-.3954830+02	.9897620+02	.1404564+04
-.6553700+01	.1456000+00			
.1388445+05	-.6155900+01	.9233770+02	-.2308442+03	.1963600+04
.2049050+02	-.4538000+00			
.2917340+04	-.3064800+01	.4597170+02	-.1149293+03	.4571972+03
.1315160+02	-.2871000+00			
.2039480+05	-.3026890+02	.4540207+03	-.1135052+04	.3231912+04
.1628651+03	-.3478000+01			
.1261239+05	-.2343060+02	.3514483+03	-.8786212+03	.2051664+04

.1551600+03	-.3221600+01			
.1040994+05	-.2227050+02	.3340444+03	-.8351116+03	.1706719+04
.1792162+03	-.3598900+01			
.1451103+05	-.3392570+02	.5088639+03	-.1272161+04	.2361600+04
.3289765+03	-.6356700+01			
.1767162+05	-.4364920+02	.6547047+03	-.1636763+04	.2825680+04
.5074080+03	-.9384300+01			
.4620000+05	-.1168837+03	.1753156+04	-.4382894+04	.7150316+04
.1624890+04	-.2859780+02			
.7098000+04	-.1857210+02	.2785814+03	-.6964045+03	.1047034+04
.3701572+03	-.5779200+01			
.2443520+04	.1195900+01	-.1793330+02	.4483340+02	-.5874920+02
.3613079+03	.1346000+01			
.1354624+05	.6166770+02	-.9244161+03	.2311069+04	-.3028363+04
.3823035+04	.1890877+03			
.3447360+04	.2827160+02	-.4237870+03	.1059481+04	-.1388314+04
.1704708+04	.9167970+02			
.3256220+04	.1396590+02	-.2092694+03	.5231838+03	-.6855575+03
.6961598+03	.7954680+02			
.5617680+04	.2416450+02	-.3620637+03	.9051795+03	-.1186104+04
.1179324+04	.1515549+03			
.2913130+04	.1105230+02	-.1654627+03	.4136720+03	-.5420427+03
.4803179+03	.1755064+03			
.7444980+04	.2476150+02	-.3706247+03	.9265996+03	-.1214134+04
.1062291+04	.4892138+03			
.4897870+04	.1512600+02	-.2263651+03	.5659378+03	-.7415507+03
.6436979+03	.3562247+03			
.1207272+05	.3442890+02	-.5151772+03	.1288003+04	-.1687669+04
.1458258+04	.9183255+03			
.4924660+04	.2275300+01	-.3399910+02	.8500390+02	-.1113756+03
.9413230+02	.5749803+03			

6. SUMMARY OF PROBLEM SOLUTIONS

IDENTIFICATION HP1

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," SIAM J. Numer. Anal., 10 (1973), pp. 843-844.

CHARACTERISTICS

parameters 2 # observations 5 rank full

other

SOLUTION

objective function value 2.0

active constraints 1,3

solution vector 0.5, 0.5

condition number 7

alternate solution vector yes

active constraints 1,5

solution vector .75, .25

condition number 8

IDENTIFICATION HP2

SOURCE: R. R. Singleton, "A Method for Minimizing the Sum of Absolute Values of Deviations," Ann. Math. Stat., 11 (1940), p. 308.

CHARACTERISTICS

parameters 3 # observations 17 rank full

other

SOLUTION

objective function value 10939/42

active constraints 2,10,16

solution vector 197/6, -29/14, -37/21

condition number 1×10^2

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP3

SOURCE: R. H. Bartels, "CL1: A FORTRAN Subroutine for Unconstrained and Constrained L_1 (LAR) Regression," Report to the National Bureau of Standards, November 1976, p. 16.

CHARACTERISTICS

parameters 2 # observations 5 rank full

other

SOLUTION

objective function value 11.0

active constraints 1,5

solution vector 68.5, 1.3

condition number 2×10^2

alternate solution vector yes

active constraints 1,3

solution vector 63.25, 1.45

condition number 2×10^2

IDENTIFICATION HP4

SOURCE: P. W. Holland, Educational Testing Service; see "Robust Test Problems for Robust Regression Problems," Proceedings of the Ninth Interface Symposium on Computer Science and Statistics, April 1976, pp. 99-110.

CHARACTERISTICS

parameters 6 # observations 135 rank full

other Repeated rows in X matrix; Some variables qualitative (-1,0,1)

SOLUTION

objective function value 284269/504

active constraints 5,20,37,39,68,110

solution vector $\frac{-643}{1008}, \frac{-647}{504}, \frac{2573}{504}, \frac{-1459}{504}, \frac{43}{1008}, \frac{601}{28}$

condition number 6×10^3

alternate solution vector yes

active constraints 5,20,37,39,68,102

solution vector $\frac{-643}{1008}, \frac{-647}{504}, \frac{869}{168}, \frac{-509}{168}, \frac{43}{1008}, \frac{1348}{63}$

condition number 7×10^3

IDENTIFICATION HP5

SOURCE: U.S. Department of Labor, workload scheduling problem, 1967.

CHARACTERISTICS

parameters 8 # observations 8 rank full

other Does not contain a column of 1's

SOLUTION

objective function value 0.0

active constraints 1,2,3,4,5,6,7,8

solution vector 126.3588, -3.378714, 1.022894, 16.35045, -45.39628, 33.13378, -34.60532, .4174025

condition number 3×10^3

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP6

SOURCE: Modification of problem from I. Barrodale and A. Young, "Algorithms for Best L_1 and L_∞ Linear Approximations on a Discrete Set," Numer. Math., 8 (1966), p. 298.

CHARACTERISTICS

parameters 2 # observations 6 rank full

other

SOLUTION

objective function value 11/15

active constraints 1,4

solution vector 76/5, -151/30

condition number 2

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP7

SOURCE: K. Spyropoulos, E. Kiountouzis and A. Young, "Discrete Approximation in the L_1 Norm," Computer J., 16 (1973), p. 184.

CHARACTERISTICS

parameters 2 # observations 7 rank full

other degeneracy

SOLUTION

objective function value 16.0

active constraints Any two distinct indices from {1,3,4,5,7}

solution vector 0,1

condition number 7×10^1 to 5×10^2

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP8

SOURCE: I. Barrodale and F. D. K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 1 # observations 201 rank full

other

SOLUTION

objective function value 21.81558

active constraints 107

solution vector .1023800

condition number 1

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP9

SOURCE: I. Barrodale and F. D. K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 2 # observations 201 rank full

other

SOLUTION

objective function value 9.271694

active constraints 94,169

solution vector .3435676, -.1044933

condition number 13

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP10

SOURCE: I. Barrodale and F. D. K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 3 # observations 201 rank full

other

SOLUTION

objective function value 9.078925

active constraints 30,101,172

solution vector .3967848, -.1625170, .01282731

condition number 5×10^1

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP11

SOURCE: I. Barrodale and F. D. K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 4 # observations 201 rank full

other

SOLUTION

objective function value 4.640714

active constraints 20,70,132,182

solution vector .1640695, .3230841, -.2446924, .03922143

condition number 4×10^2

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP12

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 5 # observations 201 rank full

other

SOLUTION

objective function value 1.055658

active constraints 14, 51, 101, 151, 188

solution vector .03041441, .8248866, -.7469379, .2235657, -.02236884

condition number 4×10^3

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP13

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 6 # observations 201 rank full

other

SOLUTION

objective function value .06050032

active constraints 4,18,84,127,165,192

solution vector -.0003814120, 1.008495, -1.041157, .4120115, -.07444122, .005177852

condition number 2×10^4

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP14

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 7 # observations 201 rank full

other

SOLUTION

objective function value .03471234

active constraints 8,30,63,101,139,172,194

solution vector -.002115490, 1.024030, -1.078237, .4485926, -.09159510, .008979690, -.0003203885

condition number 4×10^5

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP15

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 6 # observations 100 rank full

other

SOLUTION

objective function value 3.877737

active constraints 19,35,46,70,82,97

solution vector 1.129434, -.7975623, -1.628313
1.316736, -.1082232, .1593164

condition number 4×10^2

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP16

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 8 # observations 51 rank full

other

SOLUTION

objective function value .05340562

active constraints 1,4,8,20,28,35,43,47

solution vector 0., 6.262394, -44.95925, 141.1803, -136.6328, -3.195617, -1.100961, -.1572059

condition number 1×10^5

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP17

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 6 # observations 23 rank full

other degeneracy

SOLUTION

objective function value .001867521

active constraints Any six distinct indices from {2,7,11,15,20,22,23}

solution vector 0., .9995966, 0., -.1652754, 0., .007352267

condition number 1×10^5 to 4×10^5

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP18

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 6 # observations 53 rank full

other degeneracy

SOLUTION

objective function value .004344250

active constraints Any six distinct indices from {5,15,26,37,47,52,53}

solution vector 0., .9995389, 0., -.1652942, 0., .007358741

condition number 1×10^5 to 3×10^5

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP19

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 6 # observations 103 rank full

other degeneracy

SOLUTION

objective function value .008568850

active constraints Any six distinct indices from {10,29,51,73,92,102,103}

solution vector 0., .9995529, 0., -.1653271, 0., .007366283

condition number 1×10^5 to 4×10^5

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP20

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 6 # observations 203 rank full

other degeneracy

SOLUTION

objective function value .01694253

active constraints Any six distinct indices from {18,57,101,145,184,202,203}

solution vector 0., .9995427, 0., -.1653031, 0., .007360762

condition number 1×10^5 to 4×10^5

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP21

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 11 # observations 21 rank full

other

SOLUTION

objective function value .1057780

active constraints 1,3,4,6,7,12,15,16,18,20,21

solution vector 602.3115, -781.8188, 94.48467, -463.9671, -1326.421, 1248.389, 605.0711, -612.3761, 98.38093, 82.99064, -72.82688

condition number 4×10^6

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP22

SOURCE : I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 11 # observations 51 rank full

other

SOLUTION

objective function value .2667665

active constraints 1,2,5,12,13,17,23,30,39,45,50

solution vector 49.79747, -117.3993, 328.0159, -425.9049, -627.8460
642.0325, 213.0777, -283.7580, 76.16677, 35.84595,
-38.21172

condition number 5×10^6

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP23

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 11 # observations 101 rank full

other

SOLUTION

objective function value .5450632

active constraints 2,11,16,28,33,44,60,71,77,89,101

solution vector 178.6954, -242.1546, 114.2572, -254.2264, -525.6558
527.5312, 207.5384, -247.8918, 59.52677, 32.13306,
-33.36465

condition number 2×10^6

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP24

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 11 # observations 201 rank full

other

SOLUTION

objective function value 1.129209

active constraints 3,9,17,24,30,53,117,155,160,181,198

solution vector 403.3163, -277.9515, -269.0950, -210.9572, -286.9815
497.1644, 102.2011, -234.4954, 88.33653, 29.47814,
-36.77963

condition number 4×10^6

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP25

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 5 # observations 15 rank 3

other Does not contain a column of 1's

SOLUTION

objective function value 1677/49

active constraints 4,7,11

solution vector 25/49, 10/49, 4/49, 0, 0

condition number 4

alternate solution vector yes

active constraints 4,7,11

solution vector 29/49, 14/49, 0, 0, -4/49

condition number 3

IDENTIFICATION HP26

SOURCE: I. Barrodale and F.D.K. Roberts, "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," University of Wisconsin, Mathematics Research Center, MRC Technical Summary Report #1172, January 1972.

CHARACTERISTICS

parameters 5 # observations 51 rank full

other

SOLUTION

objective function value 16.73596

active constraints 4,13,26,38,51

solution vector .2884646, -5.961055, 41.81349, -82.04005, 54.89915

condition number 1×10^3

alternate solution vector no

active constraints

solution vector

condition number

IDENTIFICATION HP27

SOURCE: Treasury Department, spline-fitting problem, 1976.

CHARACTERISTICS

parameters 6 # observations 72 rank full

other

SOLUTION

objective function value 11948.75

active constraints 11,34,52,61,66,71

solution vector 5.399219, 6.926597, 7.180670, 7.532025, 7.718703, 8.343703

condition number 4×10^{1}

alternate solution vector no

active constraints

solution vector

condition number

7. REFERENCES

[1] Abdelmalek, N. N., "An Efficient Method for the Discrete Linear L_1 Approximation Problem," Mathematics of Computation, Vol. 29 (1975), 844-850.

[2] Armstrong, R. D. and Frome, E. L., "A Comparison of Two Algorithms for Absolute Deviation Curve Fitting," Journal of the American Statistical Association, Vol. 71, No. 354 (1976), 328-330.

[3] Barrodale, I., "L_1 Approximation and the Analysis of Data," Applied Statistics, Vol. 17 (1968), 51-57.

[4] Barrodale, I. and Roberts, F. D. K., "An Improved Algorithm for Discrete ℓ_1 Linear Approximation," SIAM Journal on Numerical Analysis, Vol. 10, No. 5 (1973), 839-848.

[5] Barrodale, I. and Roberts, F. D. K., "Solution of an Overdetermined System of Equations in the ℓ_1 Norm," Communications of the Association for Computing Machinery, Vol. 17 (1974), 319-320.

[6] Bartels, R. H., Conn, A. R., and Sinclair, J. W., "Minimization Techniques for Piecewise Differentiable Functions: The ℓ_1 Solution to an Overdetermined Linear Systen," SIAM Journal on Numerical Analysis, Vol. 15, No. 2 (1978), 224-241.

[7] Dongarra, J. J., Moler, C. B., Bunch, J. R., and Stewart, G. W., "LINPACK Users' Guide," Society for Industrial and Applied Mathematics, Philadelphia, 1979.

[8] Domich, P., Lawrence, J., and Shier, D., "Generators for Discrete Polynomial L_1 Approximation Problems," Journal of Research, National Bureau of Standards, Vol. 84, No. 6 (1979), to appear.

[9] Draper, N. R. and Smith, H., Applied Regression Analysis, John Wiley & Sons, New York, 1966.

[10] Gentle, J. E., "Least Absolute Values Estimation: An Introduction," Communications in Statistics, Vol. B6, No. 4 (1977), 313-328.

[11] Gentle, J. E.., Kennedy, W. J., and Sposito, V. A., "On Least Absolute Values Estimation," Communications in Statistics, Vol. A6, No. 9 (1977), 839-845.

[12] Gilsinn, J., Hoffman, K., Jackson, R. H. F., Leyendecker, E., Saunders, P., and Shier, D., "Methodology and Analysis for Comparing Discrete Linear L_1 Approximation Codes," Communications in Statistics, Vol. B6, No. 4 (1977), 399-413.

[13] Hampel, F. R., "A General Qualitative Definition of Robustness," Annals of Mathematical Statistics, Vol. 42 (1971), 1887-1896.

[14] Harter, H. L., "Nonuniqueness of Least Absolute Values Regression," Communications in Statstics, Vol. A6, No. 9 (1977), 829-383.

[15] Hillier, F. S. and Lieberman, G. J., Introduction to Operations Research, Second Edition, Holde-Day, San Francisco, 1974.

[16] Hoffman, K. and Shier, D., "A Test Problem Generator for Discrete Linear L_1 Approximation Problems," Transactions on Mathematical Software, to appear.

[17] Hollard, P. W., "Robust Test Problems for Robust Regression Programs," Proceedings of the Ninth Interface Symposium on Computer Science and Statistics, D. C. Hoaglin and R. E. Welsch (eds.), April 1976, 99-105.

[18] Johnston, J., Econometric Methods, Second Edition, McGraw-Hill, New York, 1972.

[19] Kennedy, W. J., Gentle, J. E., and Sposito, V. A., "A Computer Oriented Method for Generating Test Problems for L_1 Regression," Communications in Statistics, Vol. B6, No. 1 (1977), 21-27.

[20] Ortega, J. M., Numerical Analysis, A Second Course, Academic Press, New York, 1972.

[21] Rao, C. R., Linear Statistical Inference and its Applications, John Wiley & Sons, New York, 1965.

[22] Rice, J. R. and White, J. S., "Norms for Smoothing and Estimation," SIAM Review, Vol. 6, No. 3 (1964), 243-256.

[23] Rosenberg, B. and Carlson, D., "A Simple Approximation of the Sampling Distribution of Least Absolute Residuals Regression Estimates," Communications in Statistics, Vol. B6, No. 4 (1977), 421-437.

[24] Schlossmacher, E. J., "An Iterative Technique for Absolute Deviations Curve Fitting," Journal of the American Statistical Association, Vol. 68, No. 344 (1973), 857-859.

[25] Spyropoulos, K., Kiountouzis, E., and Young, A., "Discrete Approximation in the L_1 Norm," Computer Journal, Vol. 16, No. 2 (1973), 180-186.

[26] Tukey, J. W., "The Future of Data Analysis," Annals of Mathematical Statistics, Vol. 33 (1962), 1-67.

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☐ Document describes a computer program; SF-185, FIPS Software Summary, is attached.

16. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)*

This document assembles 27 test problems representing a variety of examples in which least absolute deviation (or L_1) data fitting has been used. The problems were collected from the literature, from the authors of several L_1 approximation codes, and from examples encountered in practice. Optimal L_1 solutions to these problems (objective function value and solution vector) have been obtained using a double-precision computer code designed for checking the Kuhn-Tucker conditions and for performing an accurate reinversion of the optimal basis. Special problem characteristics such as alternative optima, degeneracy, and rank loss are also noted. This set of test problems has proven useful in evaluating and improving the performance of L_1 codes as well as in suggesting types of problem structures that might be mimicked by problem generators.

17. KEY WORDS *(six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)*

Algorithm testing; approximation; curve fitting; least absolute deviation; polynomial approximation; spline fitting; test data; test problems.

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