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**Exercises**

Section 7.1: 1, 5, 6

1. Show that the system of equations

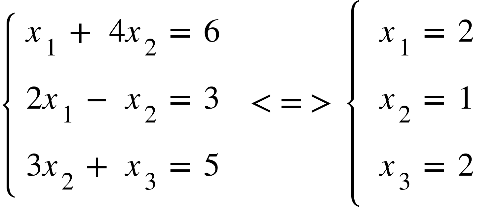
A picture containing text, antenna

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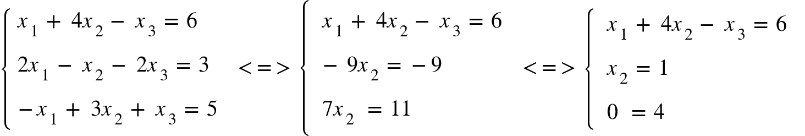
possesses a unique solution when α = 0, no solution when α = −1, and infinitely many solutions when α = 1. Also, investigate the corresponding situation when the right-hand side is replaced by 0’s.

Answer:

When α = 0

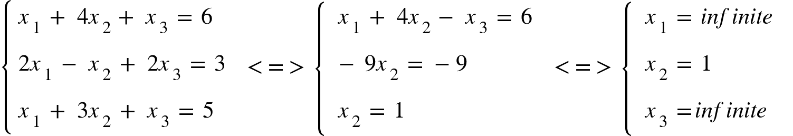


When α = -1



Hence, When α = -1 the system possesses no solution

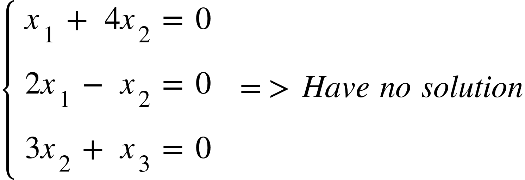
When α = -1



Hence, When α = 1 the system possesses many solution (infinitely).

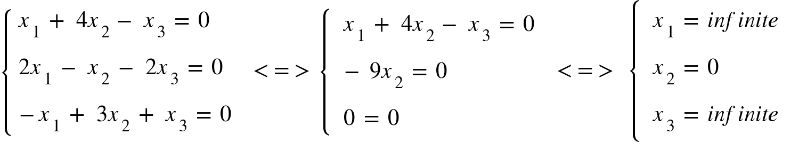
when the right-hand side is replaced by 0’s

When α = 0



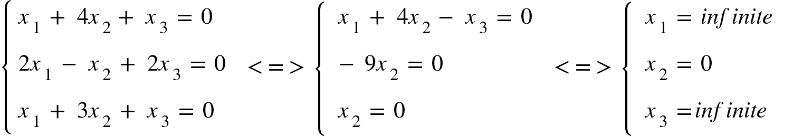
Hence, When α = 0 the system possesses no solution

When α = -1



Hence, When α = -1 the system possesses many solution (infinitely).

When α = -1



Hence, When α = 1 the system possesses many solution (infinitely).

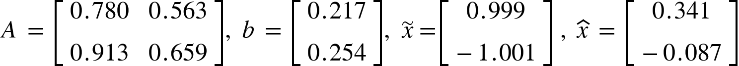
5. Consider

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Compute residual vectors ~r = A~x − b and ~r = A~x − b and decide which of ~x and ~x is the better solution vector. Now compute the error vectors e = ~x − x and ~e = ~x − x, where x = [1, −1]T is the exact solution. Discuss the implications of this example.

Answer:



To compute: r with tilde on top equals A x with tilde on top space minus space b

r with tilde on top space equals open square brackets table row cell 0.780 space space space 0.563 end cell row cell 0.913 space space space 0.659 end cell end table close square brackets open square brackets table row cell 0.999 end cell row cell negative 1.001 end cell end table close square brackets minus open square brackets table row cell 0.217 end cell row cell 0.254 end cell end table close square brackets space equals space open square brackets table row cell 0.215657 end cell row cell 0.252428 end cell end table close square brackets minus space space open square brackets table row cell 0.217 end cell row cell 0.254 end cell end table close square brackets space equals space open square brackets table row cell negative 0.001343 end cell row cell negative 0.001572 end cell end table close square brackets

To compute: r with hat on top equals space A x with hat on top minus b

r with hat on top equals open square brackets table row cell 0.780 space space space 0.563 end cell row cell 0.913 space space space 0.659 end cell end table close square brackets open square brackets table row cell 0.341 end cell row cell negative 0.087 end cell end table close square brackets minus open square brackets table row cell 0.217 end cell row cell 0.254 end cell end table close square brackets space equals space open square brackets table row cell 0.2169999 end cell row cell 0.2540000 end cell end table close square brackets minus space space open square brackets table row cell 0.217 end cell row cell 0.254 end cell end table close square brackets space equals space open square brackets table row cell negative 0.0000001 end cell row cell negative 0.0000000 end cell end table close square brackets

x = [1, −1]T

e space equals space x with tilde on top space minus space x space equals space open square brackets table row cell 0.999 end cell row cell negative 1.001 end cell end table close square brackets space minus space open square brackets table row 1 row cell negative 1 end cell end table close square brackets space equals space open square brackets table row cell negative 0.001 end cell row cell negative 0.001 end cell end table close square brackets
e space equals space x with hat on top space minus space x space equals space open square brackets table row cell 0.341 end cell row cell negative 0.087 end cell end table close square brackets space minus space open square brackets table row 1 row cell negative 1 end cell end table close square brackets space equals space open square brackets table row cell negative 0.659 end cell row cell 0.913 end cell end table close square brackets

6. Consider the system

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where b1 ≠ 0 and b2 ≠ 0. Its exact solution is

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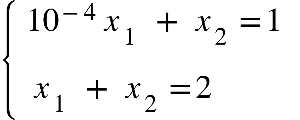
a. Let b1 = 1 and b2 = 2. Solve this system using naive Gaussian elimination with three-digit (rounded) arithmetic and compare with the exact solution x1 = 1.00010 ... and x2 = 0.99989 9....

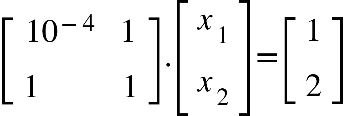
b. Repeat the preceding part after interchanging the order of the two equations.

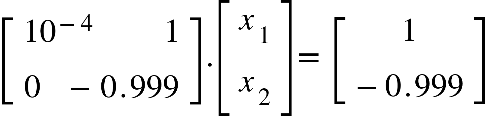
c. Find values of b1 and b2 in the original system so that naive Gaussian elimination does not give poor answers.

Answer:

1. Let b1 = 1 and b2 = 2, three-digit (rounded)



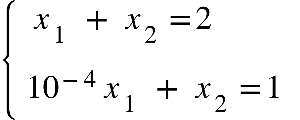




x subscript 2 space equals space fraction numerator negative 0.999 over denominator negative 0.999 end fraction space equals space 1
x subscript 1 space equals space fraction numerator 1 minus 1 over denominator 10 to the power of negative 4 end exponent end fraction space equals space 0

Hence, x1 = 0, x2 = 1,

1. After interchanging the order of the two equations

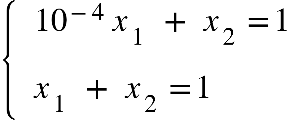


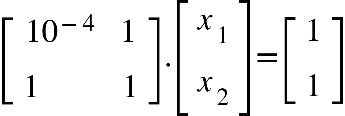
open square brackets table row cell 1 space space space space space space space space space space 1 end cell row cell 10 to the power of negative 4 end exponent space space space 1 end cell end table close square brackets. open square brackets table row cell x subscript 1 end cell row cell x subscript 2 end cell end table close square brackets equals open square brackets table row 2 row 1 end table close square brackets
open square brackets table row cell 1 space space space space space space space space space space 1 end cell row cell 0 space space space 0.999 end cell end table close square brackets. open square brackets table row cell x subscript 1 end cell row cell x subscript 2 end cell end table close square brackets equals open square brackets table row 2 row cell 0.999 end cell end table close square brackets

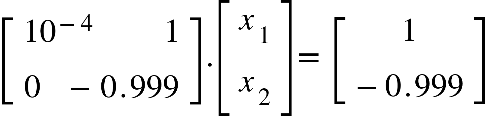
x subscript 2 space equals space fraction numerator 0.999 over denominator 0.999 end fraction space equals space 1
x subscript 1 space equals space 2 space minus 1 space equals space 1

Hence, x1 = 1, x2 = 1,

1. Find values of b1 and b2 in the original system so that naive Gaussian elimination does not give poor answers. Consider b1= b2 = 1







x subscript 2 space equals space fraction numerator negative 0.999 over denominator negative 0.999 end fraction space equals space 1
x subscript 1 space equals space fraction numerator 1 minus 1 over denominator 10 to the power of negative 4 end exponent end fraction space equals space 0

Which is exactly,, x1 = 0, x2 = 1,

**Section 7.2: 2, 7, 13(a)**

2. Solve the following system using Gaussian elimination with scaled partial pivoting:

A picture containing text, clock, gauge

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Show intermediate matrices at each step

Answer:

open square brackets table row cell 1 space space space space minus 1 space space space space space space 2 space vertical ellipsis minus 2 end cell row cell negative 2 space space space space 1 space space minus 1 space vertical ellipsis space space space space 2 end cell row cell 4 space space space space minus 1 space space space space space space 2 vertical ellipsis minus 1 end cell end table close square brackets rightwards arrow from R subscript 3 space equals space R subscript 3 space minus space 4 R subscript 1 space to R subscript 2 space equals space R subscript 2 space plus space 2 R subscript 1 space of open square brackets table row cell 1 space space space space minus 1 space space space space space space 2 space vertical ellipsis minus 2 end cell row cell 0 space space space space minus 1 space space space space space space 3 space vertical ellipsis space minus 2 end cell row cell 0 space space space space 3 space space space space space space minus 6 vertical ellipsis space space space 7 end cell end table close square brackets rightwards arrow with R subscript 3 space equals space R subscript 3 space plus space 3 R subscript 1 on top open square brackets table row cell 1 space space space space minus 1 space space space space space space 2 space vertical ellipsis minus 2 end cell row cell 0 space space space space minus 1 space space space space space space 3 space vertical ellipsis space minus 2 end cell row cell 0 space space space space space space space 0 space space space space space space 3 vertical ellipsis space space space 1 end cell end table close square brackets
rightwards arrow with R subscript 2 space equals space R subscript 2 space minus space R subscript 3 on top space space open square brackets table row cell 1 space space space space minus 1 space space space space space space 2 space vertical ellipsis minus 2 end cell row cell 0 space space space space minus 1 space space space space space space 0 vertical ellipsis space minus 3 end cell row cell 0 space space space space space space space 0 space space space space space space 3 vertical ellipsis space space space 1 end cell end table close square brackets rightwards arrow with R subscript 1 space equals space R subscript 1 space minus space R subscript 2 on top open square brackets table row cell 1 space space space space space space 0 space space space space space space 2 space vertical ellipsis space space 1 end cell row cell 0 space space space space minus 1 space space space space space space 0 vertical ellipsis space minus 3 end cell row cell 0 space space space space space space space 0 space space space space space space 3 vertical ellipsis space space space 1 end cell end table close square brackets rightwards arrow with R subscript 1 space equals space R subscript 1 space minus space 2 over 3 R subscript 3 on top open square brackets table row cell 1 space space space space space space 0 space space space space space space 0 space vertical ellipsis fraction numerator space space 1 over denominator 3 end fraction end cell row cell 0 space space space space minus 1 space space space space space space 0 vertical ellipsis space minus 3 end cell row cell 0 space space space space space space space 0 space space space space space space 3 vertical ellipsis space space space 1 end cell end table close square brackets
rightwards arrow with R subscript 2 space equals space open parentheses negative 1 close parentheses. R subscript 2 semicolon space R subscript 3 space equals fraction numerator space R subscript 3 space over denominator 3 end fraction on top open square brackets table row cell 1 space space space space space space 0 space space space space space space 0 space vertical ellipsis fraction numerator space space 1 over denominator 3 end fraction end cell row cell 0 space space space space 1 space space space space space space 0 vertical ellipsis space 3 end cell row cell 0 space space space space space space space 0 space space space space space space 1 vertical ellipsis fraction numerator space space space 1 over denominator 3 end fraction end cell end table close square brackets

Then, open square brackets table row cell x subscript 1 end cell row cell x subscript 2 end cell row cell x subscript 3 end cell end table close square brackets equals open square brackets table row cell 1 third end cell row 3 row cell 1 third end cell end table close square brackets


7. If the Gaussian elimination algorithm with scaled partial pivoting is used on the example shown, which row will be selected as the third pivot row?

A picture containing text, clock

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Answer: S = {9,9,5,7,9} Scale vector

Pivot: 8/9 = 0.889; 1/9= 0.11; 5/5=1; 4/7 = 0.57; 3/9 = 0.33

So first max pivot is row 3.

open square brackets table row cell space 8 space space minus 1 space space space space 4 space space space space 9 space space space 2 end cell row cell space 1 space space space space 0 space space space space space 3 space space space space 9 space space space space 7 end cell row cell negative 5 space space space space 0 space space space space space 1 space space space space 3 space space space space 5 end cell row cell space space space 4 space space space space 3 space space space space space 2 space space space space space 2 space space space space space 7 end cell row cell space space space space 3 space space space space 0 space space space space space 0 space space space space space 0 space space space space space 9 end cell end table close square brackets rightwards arrow open square brackets table row cell space 0 space space minus 1 space space space space 5.6 space space space space 13.8 space space space 10 end cell row cell space 0 space space space space 0 space space space space space 3.2 space space space space 9.6 space space space space 8 end cell row cell negative 5 space space space space 0 space space space space space 1 space space space space 3 space space space space 5 end cell row cell space space space 0 space space space space 3 space space space space space 2.8 space space space space space 4.4 space space space space space 11 end cell row cell space space space 0 space space space space 0 space space space space space 0.6 space space space space space 1.8 space space space space space 12 end cell end table close square brackets




S = {9,9,7,9} Scale vector. Skip row 3

Pivot: 1/9 = 0.11; 0/9= 0; 3/7 = 0.43; 0/9 = 0

So second max pivot is row 4.

open square brackets table row cell space 8 space space minus 1 space space space space 4 space space space space 9 space space space 2 end cell row cell space 1 space space space space 0 space space space space space 3 space space space space 9 space space space space 7 end cell row cell negative 5 space space space space 0 space space space space space 1 space space space space 3 space space space space 5 end cell row cell space space space 4 space space space space 3 space space space space space 2 space space space space space 2 space space space space space 7 end cell row cell space space space space 3 space space space space 0 space space space space space 0 space space space space space 0 space space space space space 9 end cell end table close square brackets rightwards arrow open square brackets table row cell space 0 space space minus 1 space space space space 5.6 space space space space 13.8 space space space 10 end cell row cell space 0 space space space space 0 space space space space space 3.2 space space space space 9.6 space space space space 8 end cell row cell negative 5 space space space space 0 space space space space space 1 space space space space 3 space space space space 5 end cell row cell space space space 0 space space space space 3 space space space space space 2.8 space space space space space 4.4 space space space space space 11 end cell row cell space space space 0 space space space space 0 space space space space space 0.6 space space space space space 1.8 space space space space space 12 end cell end table close square brackets space rightwards arrow open square brackets table row cell space 0 space space 0 space space space space 6.53 space space space space 15.27 space space space 13.67 end cell row cell space 0 space space space space 0 space space space space space 3.2 space space space space 9.6 space space space space 8 end cell row cell negative 5 space space space space 0 space space space space space 1 space space space space 3 space space space space 5 end cell row cell space space space 0 space space space space 3 space space space space space 2.8 space space space space space 4.4 space space space space space 11 end cell row cell space space space 0 space space space space 0 space space space space space 0.6 space space space space space 1.8 space space space space space 12 end cell end table close square brackets




S = {9,9,9} Scale vector. Skip row 4

Pivot: 6.53/9 = 0.73; 0.32/9= 0.036; 0.6/9 = 0.0666

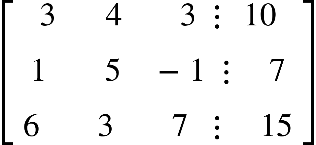
So third max pivot is row 1.

13. Solve each of the following systems using Gaussian elimination with scaled partial pivoting. Carry four significant figures. What are the contents of the index array at each step?

Chart, box and whisker chart

Description automatically generated

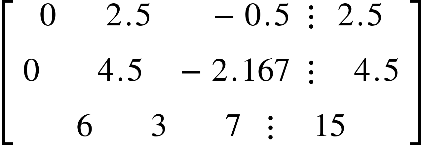
Answer:



Scales [4,5,7] used for pivot selection.

We have ¾ = 0.75; 1/5 = 0,2; 6/7 = 0.857

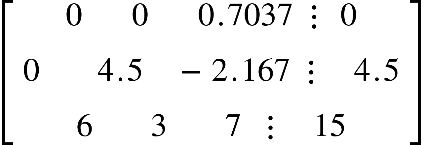
So first max pivot is row 3.



Scales [4,5] used for pivot selection. Skip row 3

Pivot: 2.5/4 = 0.625; 4.5 / 5 = 0.9

So second max pivot is row 2.



Then x3 = 0, x2 = 1, x3 = 2.

**Section 7.3: 1, 4, 5**

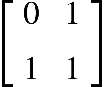
1. What happens to the tridiagonal System (1) if Gaussian elimination with partial pivoting is used to solve it? In general, what happens to a banded system?

Answer:

When banded systems with n – diagonal with n > 3, we consider not eliminating consecutive rows in order will cause fill-in. It could lead to large amounts of fill-in. Because Gaussian elimination will attempt to add scale and rows of zeros to others, which is unnecessary. If the entries have noise (values near zero), the noise will be propagated to other rows, causing fill-in, and it is inefficient and numerically dangerous.

4. Give an example of a system of linear equations in tridiagonal form that cannot be solved without pivoting.

Answer:



Consider example above, without pivoting, the system will use a11 = 0 to be a pivot , then now try to make a12 to be 0. SO, this problem can not be solve to eliminate the first column and division by zero occurs.

Using a pivoting strategy will select the second row as the pivot, and now, the problem can be solved.

5. What is the appearance of a matrix A if its elements satisfy aij = 0 when:

a. j < i − 2

b. j > i + 1

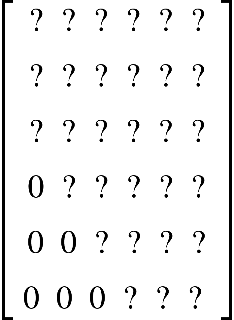
Answer:

1. Matrix A if its elements satisfy aij = 0 when j < i – 2. Otherwise, aij = ?. Example: n = 6

For i:n

For j:n

when j < i – 2 : aij = 0

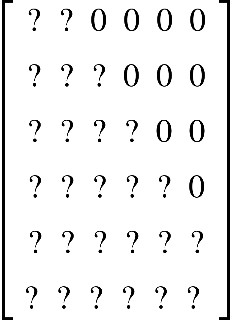


b. Matrix A if its elements satisfy aij = 0 when . j > i + 1. Otherwise, aij = ?. Example: n = 6

For i:n

For j:n

when . j > i + 1 : aij = 0



**Computing Exercises**

**Section 7.1: 3, 8**

3. Define an n × n matrix A by the equation ai j = i + j. Define b by the equation bi = i + 1. Solve **Ax = b** by using procedure Naive Gauss. What should x be?

**Answer:**

**Code:**

clc;

n = input("Enter amount nxn with n = ");

[A B] = Matrices(n)

X = Naive\_Guass(n, A, B)

function [A B] = Matrices(n)

A = zeros(n,n);

B = zeros(n,1);

for i=1:n

for j=1:n

A(i,j) = rand();

end

B(i) = rand();

end

end

function X = Naive\_Guass(n, A, B)

X = zeros(n, 1);

% Fordward

for k=1:n-1

for i=k+1:n

temp = A(i, k)/A(k,k);

A(i,k) = temp;

for j=k+1:n

A(i,j) = A(i,j) - (temp) \* A(k,j);

end

B(i) = B(i) - (temp) \* B(k);

end

end

% Backward

sum = 0;

X(n) = B(n)/A(n,n);

for i=n-1:-1:1

sum = B(i);

for j=i+1:n

sum = sum - A(i,j) \* X(j);

end

X(i) = sum/A(i,i);

end

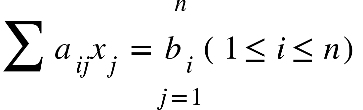
end

**Sample run:**

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8. Select a reasonable value of n, and generate a random n × n array a using a random number generator. Define the array b such that the solution of the system



is xj= j, where 1≤j≤n Test the naive Gaussian algorithm on this system. Hint: You may use the function Random, which is discussed in Chapter 13, to generate the random elements of the (ai j) array.

Answer:

**Code:**

clc;

n = input("Enter amount nxn with n = ");

[A B] = Matrices(n)

GuassElimination(n, A, B)

function [A B] = Matrices(n)

A = zeros(n,n);

B = zeros(n,1);

for i=1:n

for j=1:n

A(i,j) = rand();

end

B(i) = rand();

end

end

function X = GuassElimination(n, A, B)

a = [A B];

for j=1:n-1

% forward elimination

for i=j+1:n

if (a(j,j)) == 0

fprintf('Gauss elimination method fails due to divion by zero: %f. \n',a);

return

else

temp = (a(i,j)/a(j,j));

end

a(i,:)=a(i,:)-temp\*a(j,:); % elimination

end

end

fprintf('Matrix after forward elimination:\n');

disp(a)

x=zeros(n,1);

%Backward substitution

for s=n:-1:1

sum=0;

for k=s+1:n

sum=sum+a(s,k)\*x(k);

end

if (a(s,s)) == 0

fprintf('Gauss elimination method fails due to divion by zero: %f. \n',a);

return

else

temp = 1/a(s,s);

end

x(s)=temp\*(a(s,n+1)-sum);

end

fprintf('Solution X:\n');

disp(x)

end

**Sample run:**

Table

Description automatically generated

**Section 7.2: 2, 3**

2. Consider the system

Text

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Solve it by Gaussian elimination with scaled partial pivoting using procedures Gauss and Solve.

Answer:

Code:

clc;

[A B] = Matrices(4)

GuassElimination(4, A, B)

function [A B] = Matrices(n)

A = [0.4096 0.1234 0.3678 0.2943;

0.2246 0.3872 0.4015 0.1129;

0.3645 0.1920 0.3781 0.0643;

0.1784 0.4002 0.2786 0.3927];

B = [0.4043 0.1550 0.4240 0.2557];

end

function X = GuassElimination(n, A, B)

X = zeros(n, 1);

% Fordward

for k=1:n-1

for i=k+1:n

temp = A(i, k)/A(k,k);

A(i,k) = temp;

for j=k+1:n

A(i,j) = A(i,j) - (temp) \* A(k,j);

end

B(i) = B(i) - (temp) \* B(k);

end

end

% Backward

sum = 0;

X(n) = B(n)/A(n,n);

for i=n-1:-1:1

sum = B(i);

for j=i+1:n

sum = sum - A(i,j) \* X(j);

end

X(i) = sum/A(i,i);

end

end

Sample run:

Table

Description automatically generated

3. (Continuation) Assume that an error was made when the coefficient matrix in Computer Problem 7.2.2 was typed and that a single digit was mistyped—namely, 0.3645 became 0.3345. Solve this system, and notice the effect of this small change. Explain.

Answer:

**Code:**

clc;

[A B] = Matrices(4)

GuassElimination(4, A, B)

function [A B] = Matrices(n)

A = [0.4096 0.1234 0.3678 0.2943;

0.2246 0.3872 0.4015 0.1129;

0.3345 0.1920 0.3781 0.0643;

0.1784 0.4002 0.2786 0.3927];

B = [0.4043 0.1550 0.4240 0.2557];

end

function X = GuassElimination(n, A, B)

X = zeros(n, 1);

% Fordward

for k=1:n-1

for i=k+1:n

temp = A(i, k)/A(k,k);

A(i,k) = temp;

for j=k+1:n

A(i,j) = A(i,j) - (temp) \* A(k,j);

end

B(i) = B(i) - (temp) \* B(k);

end

end

% Backward

sum = 0;

X(n) = B(n)/A(n,n);

for i=n-1:-1:1

sum = B(i);

for j=i+1:n

sum = sum - A(i,j) \* X(j);

end

X(i) = sum/A(i,i);

end

end

**Sample run:**

Table

Description automatically generated

**Explain:**

The element's results are nearly all doubled. Comparing that to the solution of the original system, I find that the solution vector is non-uniformly scaled by some positive scaling factor greater than 1.

**Section 7.3: 1, 4, 6**

1. Rewrite procedure Tri using only four arrays, (ai), (di), (ci), and (bi), and storing the solution in the (bi) array. Test the code with both a nonsymmetric and a symmetric tridiagonal system.

Answer:

Chart, scatter chart

Description automatically generated

Text, letter

Description automatically generated

**Code:**

clc;

% System symmetric

a1 = [-1 -1 -1];

d1 = [2.04 2.04 2.04 2.04];

c1 = [-1 -1 -1];

b1 = [40.8 0.8 0.8 200.8];

x1 = Tri( a1, d1, c1, b1 );

fprintf('The Solutions of the System symmetric: \n')

for i = 1: length(x1), fprintf('X1\_%3.0f = %5.10f\n',i,x1(i)); end

% System nonsymmetric

a2 = [-1 -1 -1];

d2 = [2.04 2.04 2.04 2.04];

c2 = [1 1 1];

b2 = [40.8 0.8 0.8 200.8];

x2 = Tri( a2, d2, c2, b2 );

fprintf('\nThe Solutions of the System nonsymmetric: \n')

for i = 1: length(x2), fprintf('X2\_%3.0f = %5.10f\n',i,x2(i)); end

function x = Tri( a, d, c, b )

n = length(b);

for i = 2: 1 : n

xmult = a(i-1)/d(i-1);

d(i) = d(i) - xmult\*c(i-1);

b(i) = b(i) - xmult\*b(i-1);

end

x(n) = b(n)/d(n);

for i = n-1: -1: 1

x(i) = (b(i) - c(i)\*x(i+1))/d(i);

end

end

**Sample Run**:

Text

Description automatically generated

4. Use procedure Tri to solve the following system of 100 equations. Compare the numerical solution to the obvious exact solution.

Answer:

**Code**

clc;

N = 100;

a(1:N-1) = 0.5;

d(1:N) = 1;

c(1:N-1) = 0.5;

b(1) = 1.5; b(2:N) = 2; b(N) = 1.5;

x = Tri( a, d, c, b );

fprintf('The Solutions of the System: \n')

for i = 1: length(x), fprintf('X\_%3.0f = %5.10f\n',i,x(i)); end

function x = Tri( a, d, c, b )

n = length(b);

for i = 2: 1 : n

xmult = a(i-1)/d(i-1);

d(i) = d(i) - xmult\*c(i-1);

b(i) = b(i) - xmult\*b(i-1);

end

x(n) = b(n)/d(n);

for i = n-1: -1: 1

x(i) = (b(i) - c(i)\*x(i+1))/d(i);

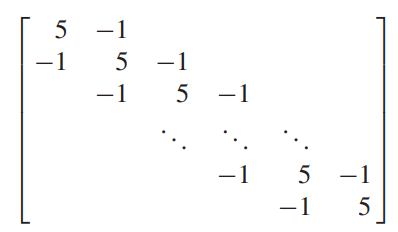
end

end

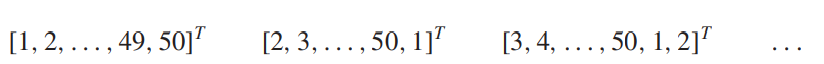
**Sample Run:**

The Solutions of the System:   
X\_ 1 = 1.0000000000  
X\_ 2 = 1.0000000000  
X\_ 3 = 1.0000000000  
X\_ 4 = 1.0000000000  
X\_ 5 = 1.0000000000  
X\_ 6 = 1.0000000000  
X\_ 7 = 1.0000000000  
X\_ 8 = 1.0000000000  
X\_ 9 = 1.0000000000  
X\_ 10 = 1.0000000000  
X\_ 11 = 1.0000000000  
X\_ 12 = 1.0000000000  
X\_ 13 = 1.0000000000  
X\_ 14 = 1.0000000000  
X\_ 15 = 1.0000000000  
X\_ 16 = 1.0000000000  
X\_ 17 = 1.0000000000  
X\_ 18 = 1.0000000000  
X\_ 19 = 1.0000000000  
X\_ 20 = 1.0000000000  
X\_ 21 = 1.0000000000  
X\_ 22 = 1.0000000000  
X\_ 23 = 1.0000000000  
X\_ 24 = 1.0000000000  
X\_ 25 = 1.0000000000  
X\_ 26 = 1.0000000000  
X\_ 27 = 1.0000000000  
X\_ 28 = 1.0000000000  
X\_ 29 = 1.0000000000  
X\_ 30 = 1.0000000000  
X\_ 31 = 1.0000000000  
X\_ 32 = 1.0000000000  
X\_ 33 = 1.0000000000  
X\_ 34 = 1.0000000000  
X\_ 35 = 1.0000000000  
X\_ 36 = 1.0000000000  
X\_ 37 = 1.0000000000  
X\_ 38 = 1.0000000000  
X\_ 39 = 1.0000000000  
X\_ 40 = 1.0000000000  
X\_ 41 = 1.0000000000  
X\_ 42 = 1.0000000000  
X\_ 43 = 1.0000000000  
X\_ 44 = 1.0000000000  
X\_ 45 = 1.0000000000  
X\_ 46 = 1.0000000000  
X\_ 47 = 1.0000000000  
X\_ 48 = 1.0000000000  
X\_ 49 = 1.0000000000  
X\_ 50 = 1.0000000000  
X\_ 51 = 1.0000000000  
X\_ 52 = 1.0000000000  
X\_ 53 = 1.0000000000  
X\_ 54 = 1.0000000000  
X\_ 55 = 1.0000000000  
X\_ 56 = 1.0000000000  
X\_ 57 = 1.0000000000  
X\_ 58 = 1.0000000000  
X\_ 59 = 1.0000000000  
X\_ 60 = 1.0000000000  
X\_ 61 = 1.0000000000  
X\_ 62 = 1.0000000000  
X\_ 63 = 1.0000000000  
X\_ 64 = 1.0000000000  
X\_ 65 = 1.0000000000  
X\_ 66 = 1.0000000000  
X\_ 67 = 1.0000000000  
X\_ 68 = 1.0000000000  
X\_ 69 = 1.0000000000  
X\_ 70 = 1.0000000000  
X\_ 71 = 1.0000000000  
X\_ 72 = 1.0000000000  
X\_ 73 = 1.0000000000  
X\_ 74 = 1.0000000000  
X\_ 75 = 1.0000000000  
X\_ 76 = 1.0000000000  
X\_ 77 = 1.0000000000  
X\_ 78 = 1.0000000000  
X\_ 79 = 1.0000000000  
X\_ 80 = 1.0000000000  
X\_ 81 = 1.0000000000  
X\_ 82 = 1.0000000000  
X\_ 83 = 1.0000000000  
X\_ 84 = 1.0000000000  
X\_ 85 = 1.0000000000  
X\_ 86 = 1.0000000000  
X\_ 87 = 1.0000000000  
X\_ 88 = 1.0000000000  
X\_ 89 = 1.0000000000  
X\_ 90 = 1.0000000000  
X\_ 91 = 1.0000000000  
X\_ 92 = 1.0000000000  
X\_ 93 = 1.0000000000  
X\_ 94 = 1.0000000000  
X\_ 95 = 1.0000000000  
X\_ 96 = 1.0000000000  
X\_ 97 = 1.0000000000  
X\_ 98 = 1.0000000000  
X\_ 99 = 1.0000000000  
X\_100 = 1.0000000000

6. Let A be the 50 × 50 tridiagonal matrix



Consider the problem Ax = b for 50 different vectors b of the form



Consider the problem Ax = b for 50 different vectors b of the form.

Answer:

**Code:**

clc;

%Value of n

n = 50;

%create a diagonal

d = 5\*ones(n, 1);

a = -1\*ones(n, 1);

c = -1\*ones(n, 1);

b = [1:n];

%Loop for different value of b

for i = 1:n

x = Tri( a, d, c, b);

fprintf('\nThe Solutions of the System: \n')

b

for i = 1: length(x), fprintf('X\_%2.0f = %5.10f\n',i,x(i)); end

b = Shift\_left(b);

end

%Tri function definition

function x = Tri( a, d, c, b )

n = length(b);

for i = 2: 1 : n

xmult = a(i-1)/d(i-1);

d(i) = d(i) - xmult\*c(i-1);

b(i) = b(i) - xmult\*b(i-1);

end

x(n) = b(n)/d(n);

for i = n-1: -1: 1

x(i) = (b(i) - c(i)\*x(i+1))/d(i);

end

end

%Shift left function definition

function b = Shift\_left(b)

n = length(b);

temp = b(1);

for i = 2:n

b(i-1) = b(i);

end

b(n) = temp;

end

**Sample Run**:

The Solutions of the System:   
b =  
 Columns 1 through 33  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33  
 Columns 34 through 50  
 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
X\_ 1 = 0.3333333333  
X\_ 2 = 0.6666666667  
X\_ 3 = 1.0000000000  
X\_ 4 = 1.3333333333  
X\_ 5 = 1.6666666667  
X\_ 6 = 2.0000000000  
X\_ 7 = 2.3333333333  
X\_ 8 = 2.6666666667  
X\_ 9 = 3.0000000000  
X\_10 = 3.3333333333  
X\_11 = 3.6666666667  
X\_12 = 4.0000000000  
X\_13 = 4.3333333333  
X\_14 = 4.6666666667  
X\_15 = 5.0000000000  
X\_16 = 5.3333333333  
X\_17 = 5.6666666667  
X\_18 = 6.0000000000  
X\_19 = 6.3333333333  
X\_20 = 6.6666666667  
X\_21 = 7.0000000000  
X\_22 = 7.3333333333  
X\_23 = 7.6666666667  
X\_24 = 8.0000000000  
X\_25 = 8.3333333333  
X\_26 = 8.6666666667  
X\_27 = 9.0000000000  
X\_28 = 9.3333333333  
X\_29 = 9.6666666667  
X\_30 = 10.0000000000  
X\_31 = 10.3333333333  
X\_32 = 10.6666666667  
X\_33 = 11.0000000000  
X\_34 = 11.3333333333  
X\_35 = 11.6666666664  
X\_36 = 11.9999999989  
X\_37 = 12.3333333283  
X\_38 = 12.6666666424  
X\_39 = 12.9999998838  
X\_40 = 13.3333327768  
X\_41 = 13.6666640003  
X\_42 = 13.9999872245  
X\_43 = 14.3332721221  
X\_44 = 14.6663733862  
X\_45 = 14.9985948090  
X\_46 = 15.3266006590  
X\_47 = 15.6344084860  
X\_48 = 15.8454417710  
X\_49 = 15.5928003690  
X\_50 = 13.1185600738  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34  
 Columns 34 through 50  
 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1  
X\_ 1 = 0.5970959492  
X\_ 2 = 0.9854797458  
X\_ 3 = 1.3303027798  
X\_ 4 = 1.6660341533  
X\_ 5 = 1.9998679868  
X\_ 6 = 2.3333057806  
X\_ 7 = 2.6666609161  
X\_ 8 = 2.9999987998  
X\_ 9 = 3.3333330828  
X\_10 = 3.6666666144  
X\_11 = 3.9999999891  
X\_12 = 4.3333333311  
X\_13 = 4.6666666662  
X\_14 = 4.9999999999  
X\_15 = 5.3333333333  
X\_16 = 5.6666666667  
X\_17 = 6.0000000000  
X\_18 = 6.3333333333  
X\_19 = 6.6666666667  
X\_20 = 7.0000000000  
X\_21 = 7.3333333333  
X\_22 = 7.6666666667  
X\_23 = 8.0000000000  
X\_24 = 8.3333333333  
X\_25 = 8.6666666667  
X\_26 = 9.0000000000  
X\_27 = 9.3333333333  
X\_28 = 9.6666666667  
X\_29 = 10.0000000000  
X\_30 = 10.3333333333  
X\_31 = 10.6666666667  
X\_32 = 11.0000000000  
X\_33 = 11.3333333333  
X\_34 = 11.6666666665  
X\_35 = 11.9999999991  
X\_36 = 12.3333333292  
X\_37 = 12.6666666466  
X\_38 = 12.9999999040  
X\_39 = 13.3333328733  
X\_40 = 13.6666644624  
X\_41 = 13.9999894389  
X\_42 = 14.3332827323  
X\_43 = 14.6664242223  
X\_44 = 14.9988383795  
X\_45 = 15.3277676751  
X\_46 = 15.6399999958  
X\_47 = 15.8722323040  
X\_48 = 15.7211615243  
X\_49 = 13.7335753176  
X\_50 = 2.9467150635  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35  
 Columns 34 through 50  
 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2  
X\_ 1 = 0.8608585650  
X\_ 2 = 1.3042928249  
X\_ 3 = 1.6606055596  
X\_ 4 = 1.9987349733  
X\_ 5 = 2.3330693069  
X\_ 6 = 2.6666115611  
X\_ 7 = 2.9999884988  
X\_ 8 = 3.3333309329  
X\_ 9 = 3.6666661657  
X\_10 = 3.9999998954  
X\_11 = 4.3333333115  
X\_12 = 4.6666666621  
X\_13 = 4.9999999990  
X\_14 = 5.3333333331  
X\_15 = 5.6666666666  
X\_16 = 6.0000000000  
X\_17 = 6.3333333333  
X\_18 = 6.6666666667  
X\_19 = 7.0000000000  
X\_20 = 7.3333333333  
X\_21 = 7.6666666667  
X\_22 = 8.0000000000  
X\_23 = 8.3333333333  
X\_24 = 8.6666666667  
X\_25 = 9.0000000000  
X\_26 = 9.3333333333  
X\_27 = 9.6666666667  
X\_28 = 10.0000000000  
X\_29 = 10.3333333333  
X\_30 = 10.6666666667  
X\_31 = 11.0000000000  
X\_32 = 11.3333333333  
X\_33 = 11.6666666665  
X\_34 = 11.9999999991  
X\_35 = 12.3333333292  
X\_36 = 12.6666666469  
X\_37 = 12.9999999055  
X\_38 = 13.3333328803  
X\_39 = 13.6666644962  
X\_40 = 13.9999896009  
X\_41 = 14.3332835081  
X\_42 = 14.6664279398  
X\_43 = 14.9988561909  
X\_44 = 15.3278530147  
X\_45 = 15.6404088828  
X\_46 = 15.8741913994  
X\_47 = 15.7305481142  
X\_48 = 13.7785491717  
X\_49 = 3.1621977441  
X\_50 = 1.0324395488  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36  
 Columns 34 through 50  
 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3  
X\_ 1 = 1.1246211808  
X\_ 2 = 1.6231059041  
X\_ 3 = 1.9909083395  
X\_ 4 = 2.3314357933  
X\_ 5 = 2.6662706270  
X\_ 6 = 2.9999173417  
X\_ 7 = 3.3333160815  
X\_ 8 = 3.6666630660  
X\_ 9 = 3.9999992485  
X\_10 = 4.3333331765  
X\_11 = 4.6666666339  
X\_12 = 4.9999999932  
X\_13 = 5.3333333319  
X\_14 = 5.6666666664  
X\_15 = 5.9999999999  
X\_16 = 6.3333333333  
X\_17 = 6.6666666667  
X\_18 = 7.0000000000  
X\_19 = 7.3333333333  
X\_20 = 7.6666666667  
X\_21 = 8.0000000000  
X\_22 = 8.3333333333

X\_23 = 8.6666666667  
X\_24 = 9.0000000000  
X\_25 = 9.3333333333  
X\_26 = 9.6666666667  
X\_27 = 10.0000000000  
X\_28 = 10.3333333333  
X\_29 = 10.6666666667  
X\_30 = 11.0000000000  
X\_31 = 11.3333333333  
X\_32 = 11.6666666665  
X\_33 = 11.9999999991  
X\_34 = 12.3333333292  
X\_35 = 12.6666666470  
X\_36 = 12.9999999057  
X\_37 = 13.3333328815  
X\_38 = 13.6666645020  
X\_39 = 13.9999896284  
X\_40 = 14.3332836401  
X\_41 = 14.6664285723  
X\_42 = 14.9988592213  
X\_43 = 15.3278675342  
X\_44 = 15.6404784496  
X\_45 = 15.8745247140  
X\_46 = 15.7321451202  
X\_47 = 13.7862008872  
X\_48 = 3.1988593156  
X\_49 = 1.2080956907  
X\_50 = 0.8416191381  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37  
 Columns 34 through 50  
 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4  
X\_ 1 = 1.3883837966  
X\_ 2 = 1.9419189832  
X\_ 3 = 2.3212111193  
X\_ 4 = 2.6641366133  
X\_ 5 = 2.9994719471  
X\_ 6 = 3.3332231223  
X\_ 7 = 3.6666436643  
X\_ 8 = 3.9999951991  
X\_ 9 = 4.3333323313  
X\_10 = 4.6666664575  
X\_11 = 4.9999999564  
X\_12 = 5.3333333242  
X\_13 = 5.6666666648  
X\_14 = 5.9999999996  
X\_15 = 6.3333333333  
X\_16 = 6.6666666666  
X\_17 = 7.0000000000  
X\_18 = 7.3333333333  
X\_19 = 7.6666666667  
X\_20 = 8.0000000000  
X\_21 = 8.3333333333  
X\_22 = 8.6666666667  
X\_23 = 9.0000000000  
X\_24 = 9.3333333333  
X\_25 = 9.6666666667  
X\_26 = 10.0000000000  
X\_27 = 10.3333333333  
X\_28 = 10.6666666667  
X\_29 = 11.0000000000  
X\_30 = 11.3333333333  
X\_31 = 11.6666666665  
X\_32 = 11.9999999991  
X\_33 = 12.3333333292  
X\_34 = 12.6666666470  
X\_35 = 12.9999999058  
X\_36 = 13.3333328818  
X\_37 = 13.6666645034  
X\_38 = 13.9999896353  
X\_39 = 14.3332836732  
X\_40 = 14.6664287308  
X\_41 = 14.9988599807  
X\_42 = 15.3278711727  
X\_43 = 15.6404958826  
X\_44 = 15.8746082406  
X\_45 = 15.7325453202  
X\_46 = 13.7881183604  
X\_47 = 3.2080464818  
X\_48 = 1.2521140484  
X\_49 = 1.0525237601  
X\_50 = 1.0105047520  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38  
 Columns 34 through 50  
 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5  
X\_ 1 = 1.6521464125  
X\_ 2 = 2.2607320623  
X\_ 3 = 2.6515138991  
X\_ 4 = 2.9968374333  
X\_ 5 = 3.3326732672  
X\_ 6 = 3.6665289028  
X\_ 7 = 3.9999712470  
X\_ 8 = 4.3333273322  
X\_ 9 = 4.6666654142  
X\_10 = 4.9999997386  
X\_11 = 5.3333332788  
X\_12 = 5.6666666553  
X\_13 = 5.9999999976  
X\_14 = 6.3333333328  
X\_15 = 6.6666666666  
X\_16 = 7.0000000000  
X\_17 = 7.3333333333  
X\_18 = 7.6666666667  
X\_19 = 8.0000000000  
X\_20 = 8.3333333333  
X\_21 = 8.6666666667  
X\_22 = 9.0000000000  
X\_23 = 9.3333333333  
X\_24 = 9.6666666667  
X\_25 = 10.0000000000  
X\_26 = 10.3333333333  
X\_27 = 10.6666666667  
X\_28 = 11.0000000000  
X\_29 = 11.3333333333  
X\_30 = 11.6666666665  
X\_31 = 11.9999999991  
X\_32 = 12.3333333292  
X\_33 = 12.6666666470  
X\_34 = 12.9999999058  
X\_35 = 13.3333328819  
X\_36 = 13.6666645038  
X\_37 = 13.9999896371  
X\_38 = 14.3332836818  
X\_39 = 14.6664287718  
X\_40 = 14.9988601774  
X\_41 = 15.3278721154  
X\_42 = 15.6405003995  
X\_43 = 15.8746298823  
X\_44 = 15.7326490122  
X\_45 = 13.7886151784  
X\_46 = 3.2104268800  
X\_47 = 1.2635192218  
X\_48 = 1.1071692289  
X\_49 = 1.2723269227  
X\_50 = 1.2544653845  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39  
 Columns 34 through 50  
 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6  
X\_ 1 = 1.9159090283  
X\_ 2 = 2.5795451414  
X\_ 3 = 2.9818166789  
X\_ 4 = 3.3295382533  
X\_ 5 = 3.6658745873  
X\_ 6 = 3.9998346834  
X\_ 7 = 4.3332988298  
X\_ 8 = 4.6666594654  
X\_ 9 = 4.9999984970  
X\_10 = 5.3333330196  
X\_11 = 5.6666666012  
X\_12 = 5.9999999863  
X\_13 = 6.3333333305  
X\_14 = 6.6666666661  
X\_15 = 6.9999999999  
X\_16 = 7.3333333333  
X\_17 = 7.6666666667  
X\_18 = 8.0000000000  
X\_19 = 8.3333333333  
X\_20 = 8.6666666667  
X\_21 = 9.0000000000  
X\_22 = 9.3333333333  
X\_23 = 9.6666666667  
X\_24 = 10.0000000000  
X\_25 = 10.3333333333  
X\_26 = 10.6666666667  
X\_27 = 11.0000000000  
X\_28 = 11.3333333333  
X\_29 = 11.6666666665  
X\_30 = 11.9999999991  
X\_31 = 12.3333333292  
X\_32 = 12.6666666470  
X\_33 = 12.9999999058  
X\_34 = 13.3333328819  
X\_35 = 13.6666645039  
X\_36 = 13.9999896376  
X\_37 = 14.3332836840  
X\_38 = 14.6664287822  
X\_39 = 14.9988602270  
X\_40 = 15.3278723529  
X\_41 = 15.6405015374  
X\_42 = 15.8746353341  
X\_43 = 15.7326751330  
X\_44 = 13.7887403310  
X\_45 = 3.2110265218  
X\_46 = 1.2663922778  
X\_47 = 1.1209348674  
X\_48 = 1.3382820593  
X\_49 = 1.5704754290  
X\_50 = 1.5140950858

The Solutions of the System:   
b =  
 Columns 1 through 33  
 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40  
 Columns 34 through 50  
 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7  
X\_ 1 = 2.1796716441  
X\_ 2 = 2.8983582206  
X\_ 3 = 3.3121194588  
X\_ 4 = 3.6622390732  
X\_ 5 = 3.9990759074  
X\_ 6 = 4.3331404640  
X\_ 7 = 4.6666264125  
X\_ 8 = 4.9999915985  
X\_ 9 = 5.3333315798  
X\_10 = 5.6666663007  
X\_11 = 5.9999999236  
X\_12 = 6.3333333174  
X\_13 = 6.6666666633  
X\_14 = 6.9999999993  
X\_15 = 7.3333333332  
X\_16 = 7.6666666666  
X\_17 = 8.0000000000  
X\_18 = 8.3333333333  
X\_19 = 8.6666666667  
X\_20 = 9.0000000000  
X\_21 = 9.3333333333  
X\_22 = 9.6666666667  
X\_23 = 10.0000000000  
X\_24 = 10.3333333333  
X\_25 = 10.6666666667  
X\_26 = 11.0000000000  
X\_27 = 11.3333333333  
X\_28 = 11.6666666665  
X\_29 = 11.9999999991  
X\_30 = 12.3333333292  
X\_31 = 12.6666666470  
X\_32 = 12.9999999058  
X\_33 = 13.3333328819  
X\_34 = 13.6666645039  
X\_35 = 13.9999896377  
X\_36 = 14.3332836845  
X\_37 = 14.6664287847  
X\_38 = 14.9988602392  
X\_39 = 15.3278724111  
X\_40 = 15.6405018161  
X\_41 = 15.8746366695  
X\_42 = 15.7326815314  
X\_43 = 13.7887709873  
X\_44 = 3.2111734051  
X\_45 = 1.2670960384  
X\_46 = 1.1243067868  
X\_47 = 1.3544378956  
X\_48 = 1.6478826913  
X\_49 = 1.8849755607  
X\_50 = 1.7769951121  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41  
 Columns 34 through 50  
 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8  
X\_ 1 = 2.4434342599  
X\_ 2 = 3.2171712997  
X\_ 3 = 3.6424222386  
X\_ 4 = 3.9949398932  
X\_ 5 = 4.3322772276  
X\_ 6 = 4.6664462446  
X\_ 7 = 4.9999539952  
X\_ 8 = 5.3333237316  
X\_ 9 = 5.6666646627  
X\_10 = 5.9999995817  
X\_11 = 6.3333332460  
X\_12 = 6.6666666484  
X\_13 = 6.9999999962  
X\_14 = 7.3333333325  
X\_15 = 7.6666666665  
X\_16 = 8.0000000000  
X\_17 = 8.3333333333  
X\_18 = 8.6666666667  
X\_19 = 9.0000000000  
X\_20 = 9.3333333333  
X\_21 = 9.6666666667  
X\_22 = 10.0000000000  
X\_23 = 10.3333333333  
X\_24 = 10.6666666667  
X\_25 = 11.0000000000  
X\_26 = 11.3333333333  
X\_27 = 11.6666666665  
X\_28 = 11.9999999991  
X\_29 = 12.3333333292  
X\_30 = 12.6666666470  
X\_31 = 12.9999999058  
X\_32 = 13.3333328819  
X\_33 = 13.6666645039  
X\_34 = 13.9999896377  
X\_35 = 14.3332836846  
X\_36 = 14.6664287853  
X\_37 = 14.9988602421  
X\_38 = 15.3278724250  
X\_39 = 15.6405018829  
X\_40 = 15.8746369896  
X\_41 = 15.7326830649  
X\_42 = 13.7887783347  
X\_43 = 3.2112086088  
X\_44 = 1.2672647091  
X\_45 = 1.1251149365  
X\_46 = 1.3583099735  
X\_47 = 1.6664349309  
X\_48 = 1.9738646812  
X\_49 = 2.2028884753  
X\_50 = 2.0405776951  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42  
 Columns 34 through 50  
 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9  
X\_ 1 = 2.7071968758  
X\_ 2 = 3.5359843788  
X\_ 3 = 3.9727250184  
X\_ 4 = 4.3276407132  
X\_ 5 = 4.6654785477  
X\_ 6 = 4.9997520251  
X\_ 7 = 5.3332815780  
X\_ 8 = 5.6666558647  
X\_ 9 = 5.9999977455  
X\_10 = 6.3333328628  
X\_11 = 6.6666665685  
X\_12 = 6.9999999795  
X\_13 = 7.3333333291  
X\_14 = 7.6666666658  
X\_15 = 7.9999999998  
X\_16 = 8.3333333333  
X\_17 = 8.6666666667  
X\_18 = 9.0000000000  
X\_19 = 9.3333333333  
X\_20 = 9.6666666667  
X\_21 = 10.0000000000  
X\_22 = 10.3333333333  
X\_23 = 10.6666666667  
X\_24 = 11.0000000000  
X\_25 = 11.3333333333  
X\_26 = 11.6666666665  
X\_27 = 11.9999999991  
X\_28 = 12.3333333292  
X\_29 = 12.6666666470  
X\_30 = 12.9999999058  
X\_31 = 13.3333328819  
X\_32 = 13.6666645039  
X\_33 = 13.9999896377  
X\_34 = 14.3332836846  
X\_35 = 14.6664287855  
X\_36 = 14.9988602428  
X\_37 = 15.3278724283  
X\_38 = 15.6405018987  
X\_39 = 15.8746370650  
X\_40 = 15.7326834263  
X\_41 = 13.7887800664  
X\_42 = 3.2112169058  
X\_43 = 1.2673044624  
X\_44 = 1.1253054062  
X\_45 = 1.3592225688  
X\_46 = 1.6708074377  
X\_47 = 1.9948146195  
X\_48 = 2.3032656597  
X\_49 = 2.5215136791  
X\_50 = 2.3043027358  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43  
 Columns 34 through 50  
 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10  
X\_ 1 = 2.9709594916  
X\_ 2 = 3.8547974580  
X\_ 3 = 4.3030277982  
X\_ 4 = 4.6603415332  
X\_ 5 = 4.9986798678  
X\_ 6 = 5.3330578057  
X\_ 7 = 5.6666091607  
X\_ 8 = 5.9999879978  
X\_ 9 = 6.3333308283  
X\_10 = 6.6666661438  
X\_11 = 6.9999998909  
X\_12 = 7.3333333106  
X\_13 = 7.6666666619  
X\_14 = 7.9999999990  
X\_15 = 8.3333333331  
X\_16 = 8.6666666666  
X\_17 = 9.0000000000  
X\_18 = 9.3333333333  
X\_19 = 9.6666666667  
X\_20 = 10.0000000000  
X\_21 = 10.3333333333  
X\_22 = 10.6666666667  
X\_23 = 11.0000000000

X\_24 = 11.3333333333  
X\_25 = 11.6666666665  
X\_26 = 11.9999999991  
X\_27 = 12.3333333292  
X\_28 = 12.6666666470  
X\_29 = 12.9999999058  
X\_30 = 13.3333328819  
X\_31 = 13.6666645039  
X\_32 = 13.9999896377  
X\_33 = 14.3332836846  
X\_34 = 14.6664287855  
X\_35 = 14.9988602429  
X\_36 = 15.3278724290  
X\_37 = 15.6405019023  
X\_38 = 15.8746370825  
X\_39 = 15.7326835103  
X\_40 = 13.7887804692  
X\_41 = 3.2112188357  
X\_42 = 1.2673137091  
X\_43 = 1.1253497098  
X\_44 = 1.3594348400  
X\_45 = 1.6718244903  
X\_46 = 1.9996876114  
X\_47 = 2.3266135668  
X\_48 = 2.6333802226  
X\_49 = 2.8402875464  
X\_50 = 2.5680575093  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44  
 Columns 34 through 50  
 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11  
X\_ 1 = 3.2347221074  
X\_ 2 = 4.1736105371  
X\_ 3 = 4.6333305781  
X\_ 4 = 4.9930423532  
X\_ 5 = 5.3318811879  
X\_ 6 = 5.6663635863  
X\_ 7 = 5.9999367434  
X\_ 8 = 6.3333201309  
X\_ 9 = 6.6666639112  
X\_10 = 6.9999994249  
X\_11 = 7.3333332133  
X\_12 = 7.6666666416  
X\_13 = 7.9999999948  
X\_14 = 8.3333333322  
X\_15 = 8.6666666664  
X\_16 = 9.0000000000  
X\_17 = 9.3333333333  
X\_18 = 9.6666666667  
X\_19 = 10.0000000000  
X\_20 = 10.3333333333  
X\_21 = 10.6666666667  
X\_22 = 11.0000000000  
X\_23 = 11.3333333333  
X\_24 = 11.6666666665  
X\_25 = 11.9999999991  
X\_26 = 12.3333333292  
X\_27 = 12.6666666470  
X\_28 = 12.9999999058  
X\_29 = 13.3333328819  
X\_30 = 13.6666645039  
X\_31 = 13.9999896377  
X\_32 = 14.3332836846  
X\_33 = 14.6664287855  
X\_34 = 14.9988602429  
X\_35 = 15.3278724292  
X\_36 = 15.6405019032  
X\_37 = 15.8746370866  
X\_38 = 15.7326835297  
X\_39 = 13.7887805619  
X\_40 = 3.2112192798  
X\_41 = 1.2673158372  
X\_42 = 1.1253599062  
X\_43 = 1.3594836940  
X\_44 = 1.6720585636  
X\_45 = 2.0008091239  
X\_46 = 2.3319870558  
X\_47 = 2.6591261550  
X\_48 = 2.9636437193  
X\_49 = 3.1590924415  
X\_50 = 2.8318184883  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45  
 Columns 34 through 50  
 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12  
X\_ 1 = 3.4984847232  
X\_ 2 = 4.4924236162  
X\_ 3 = 4.9636333579  
X\_ 4 = 5.3257431732  
X\_ 5 = 5.6650825080  
X\_ 6 = 5.9996693668  
X\_ 7 = 6.3332643262  
X\_ 8 = 6.6666522640  
X\_ 9 = 6.9999969940  
X\_10 = 7.3333327059  
X\_11 = 7.6666665357  
X\_12 = 7.9999999727  
X\_13 = 8.3333333276  
X\_14 = 8.6666666655  
X\_15 = 8.9999999998  
X\_16 = 9.3333333333  
X\_17 = 9.6666666667  
X\_18 = 10.0000000000  
X\_19 = 10.3333333333  
X\_20 = 10.6666666667  
X\_21 = 11.0000000000  
X\_22 = 11.3333333333  
X\_23 = 11.6666666665  
X\_24 = 11.9999999991  
X\_25 = 12.3333333292  
X\_26 = 12.6666666470  
X\_27 = 12.9999999058  
X\_28 = 13.3333328819  
X\_29 = 13.6666645039  
X\_30 = 13.9999896377  
X\_31 = 14.3332836846  
X\_32 = 14.6664287855  
X\_33 = 14.9988602430  
X\_34 = 15.3278724293  
X\_35 = 15.6405019034  
X\_36 = 15.8746370875  
X\_37 = 15.7326835341  
X\_38 = 13.7887805831  
X\_39 = 3.2112193812  
X\_40 = 1.2673163227  
X\_41 = 1.1253622326  
X\_42 = 1.3594948401  
X\_43 = 1.6721119679  
X\_44 = 2.0010649993  
X\_45 = 2.3332130285  
X\_46 = 2.6650001435  
X\_47 = 2.9917876887  
X\_48 = 3.2939383003  
X\_49 = 3.4779038126  
X\_50 = 3.0955807625  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46  
 Columns 34 through 50  
 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13  
X\_ 1 = 3.7622473391  
X\_ 2 = 4.8112366954  
X\_ 3 = 5.2939361377  
X\_ 4 = 5.6584439932  
X\_ 5 = 5.9982838281  
X\_ 6 = 6.3329751474  
X\_ 7 = 6.6665919089  
X\_ 8 = 6.9999843971  
X\_ 9 = 7.3333300768  
X\_10 = 7.6666659870  
X\_11 = 7.9999998581  
X\_12 = 8.3333333037  
X\_13 = 8.6666666605  
X\_14 = 8.9999999987  
X\_15 = 9.3333333331  
X\_16 = 9.6666666666  
X\_17 = 10.0000000000  
X\_18 = 10.3333333333  
X\_19 = 10.6666666667  
X\_20 = 11.0000000000  
X\_21 = 11.3333333333  
X\_22 = 11.6666666665  
X\_23 = 11.9999999991  
X\_24 = 12.3333333292  
X\_25 = 12.6666666470  
X\_26 = 12.9999999058  
X\_27 = 13.3333328819  
X\_28 = 13.6666645039  
X\_29 = 13.9999896377  
X\_30 = 14.3332836846  
X\_31 = 14.6664287855  
X\_32 = 14.9988602430  
X\_33 = 15.3278724293  
X\_34 = 15.6405019034  
X\_35 = 15.8746370877  
X\_36 = 15.7326835351  
X\_37 = 13.7887805878  
X\_38 = 3.2112194041  
X\_39 = 1.2673164327  
X\_40 = 1.1253627595  
X\_41 = 1.3594973646  
X\_42 = 1.6721240637  
X\_43 = 2.0011229540  
X\_44 = 2.3334907061  
X\_45 = 2.6663305767  
X\_46 = 2.9981621772  
X\_47 = 3.3244803092  
X\_48 = 3.6242393689  
X\_49 = 3.7967165352  
X\_50 = 3.3593433070  
  
The Solutions of the System:

b =  
 Columns 1 through 33  
 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47  
 Columns 34 through 50  
 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14  
X\_ 1 = 4.0260099549  
X\_ 2 = 5.1300497745  
X\_ 3 = 5.6242389175  
X\_ 4 = 5.9911448132  
X\_ 5 = 6.3314851482  
X\_ 6 = 6.6662809280  
X\_ 7 = 6.9999194916  
X\_ 8 = 7.3333165303  
X\_ 9 = 7.6666631597  
X\_10 = 7.9999992680  
X\_11 = 8.3333331806  
X\_12 = 8.6666666348  
X\_13 = 8.9999999933  
X\_14 = 9.3333333319  
X\_15 = 9.6666666664  
X\_16 = 9.9999999999  
X\_17 = 10.3333333333  
X\_18 = 10.6666666667  
X\_19 = 11.0000000000  
X\_20 = 11.3333333333  
X\_21 = 11.6666666665  
X\_22 = 11.9999999991  
X\_23 = 12.3333333292  
X\_24 = 12.6666666470  
X\_25 = 12.9999999058  
X\_26 = 13.3333328819  
X\_27 = 13.6666645039  
X\_28 = 13.9999896377  
X\_29 = 14.3332836846  
X\_30 = 14.6664287855  
X\_31 = 14.9988602430  
X\_32 = 15.3278724293  
X\_33 = 15.6405019034  
X\_34 = 15.8746370877  
X\_35 = 15.7326835353  
X\_36 = 13.7887805889  
X\_37 = 3.2112194093  
X\_38 = 1.2673164575  
X\_39 = 1.1253628781  
X\_40 = 1.3594979329  
X\_41 = 1.6721267865  
X\_42 = 2.0011359995  
X\_43 = 2.3335532112  
X\_44 = 2.6666300564  
X\_45 = 2.9995970708  
X\_46 = 3.3313552977  
X\_47 = 3.6571794179  
X\_48 = 3.9545417916  
X\_49 = 4.1155295399  
X\_50 = 3.6231059080  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48  
 Columns 34 through 50  
 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
X\_ 1 = 4.2897725707  
X\_ 2 = 5.4488628536  
X\_ 3 = 5.9545416974  
X\_ 4 = 6.3238456331  
X\_ 5 = 6.6646864683  
X\_ 6 = 6.9995867085  
X\_ 7 = 7.3332470744  
X\_ 8 = 7.6666486634  
X\_ 9 = 7.9999962425  
X\_10 = 8.3333325491  
X\_11 = 8.6666665030  
X\_12 = 8.9999999658  
X\_13 = 9.3333333262  
X\_14 = 9.6666666652  
X\_15 = 9.9999999997  
X\_16 = 10.3333333333  
X\_17 = 10.6666666667  
X\_18 = 11.0000000000  
X\_19 = 11.3333333333  
X\_20 = 11.6666666665  
X\_21 = 11.9999999991  
X\_22 = 12.3333333292  
X\_23 = 12.6666666470  
X\_24 = 12.9999999058  
X\_25 = 13.3333328819  
X\_26 = 13.6666645039  
X\_27 = 13.9999896377  
X\_28 = 14.3332836846  
X\_29 = 14.6664287855  
X\_30 = 14.9988602430  
X\_31 = 15.3278724293  
X\_32 = 15.6405019034  
X\_33 = 15.8746370878  
X\_34 = 15.7326835354  
X\_35 = 13.7887805892  
X\_36 = 3.2112194104  
X\_37 = 1.2673164630  
X\_38 = 1.1253629046  
X\_39 = 1.3594980602  
X\_40 = 1.6721273961  
X\_41 = 2.0011389205  
X\_42 = 2.3335672065  
X\_43 = 2.6666971118  
X\_44 = 2.9999183527  
X\_45 = 3.3328946518  
X\_46 = 3.6645549065  
X\_47 = 3.9898798807  
X\_48 = 4.2848444968  
X\_49 = 4.4343426035  
X\_50 = 3.8868685207  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49  
 Columns 34 through 50  
 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
X\_ 1 = 4.5535351865  
X\_ 2 = 5.7676759327  
X\_ 3 = 6.2848444772  
X\_ 4 = 6.6565464531  
X\_ 5 = 6.9978877884  
X\_ 6 = 7.3328924891  
X\_ 7 = 7.6665746571  
X\_ 8 = 7.9999807965  
X\_ 9 = 8.3333293253  
X\_10 = 8.6666658301  
X\_11 = 8.9999998254  
X\_12 = 9.3333332969  
X\_13 = 9.6666666591  
X\_14 = 9.9999999984  
X\_15 = 10.3333333330  
X\_16 = 10.6666666666  
X\_17 = 11.0000000000  
X\_18 = 11.3333333333  
X\_19 = 11.6666666665  
X\_20 = 11.9999999991  
X\_21 = 12.3333333292  
X\_22 = 12.6666666470  
X\_23 = 12.9999999058  
X\_24 = 13.3333328819  
X\_25 = 13.6666645039  
X\_26 = 13.9999896377  
X\_27 = 14.3332836846  
X\_28 = 14.6664287855  
X\_29 = 14.9988602430  
X\_30 = 15.3278724293  
X\_31 = 15.6405019034  
X\_32 = 15.8746370878  
X\_33 = 15.7326835354  
X\_34 = 13.7887805892  
X\_35 = 3.2112194107  
X\_36 = 1.2673164642  
X\_37 = 1.1253629106  
X\_38 = 1.3594980885  
X\_39 = 1.6721275320  
X\_40 = 2.0011395715  
X\_41 = 2.3335703257  
X\_42 = 2.6667120568  
X\_43 = 2.9999899586  
X\_44 = 3.3332377359  
X\_45 = 3.6661987211  
X\_46 = 3.9977558694  
X\_47 = 4.3225806261  
X\_48 = 4.6151472611  
X\_49 = 4.7531556794  
X\_50 = 4.1506311359  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
 Columns 34 through 50  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17  
X\_ 1 = 4.8172978024  
X\_ 2 = 6.0864890119  
X\_ 3 = 6.6151472570  
X\_ 4 = 6.9892472731  
X\_ 5 = 7.3310891086  
X\_ 6 = 7.6661982697  
X\_ 7 = 7.9999022399  
X\_ 8 = 8.3333129296  
X\_ 9 = 8.6666624082  
X\_10 = 8.9999991112  
X\_11 = 9.3333331478  
X\_12 = 9.6666666279  
X\_13 = 9.9999999919  
X\_14 = 10.3333333316  
X\_15 = 10.6666666663  
X\_16 = 10.9999999999  
X\_17 = 11.3333333333  
X\_18 = 11.6666666665  
X\_19 = 11.9999999991  
X\_20 = 12.3333333292  
X\_21 = 12.6666666470  
X\_22 = 12.9999999058  
X\_23 = 13.3333328819  
X\_24 = 13.6666645039

X\_25 = 13.9999896377  
X\_26 = 14.3332836846  
X\_27 = 14.6664287855  
X\_28 = 14.9988602430  
X\_29 = 15.3278724293  
X\_30 = 15.6405019034  
X\_31 = 15.8746370878  
X\_32 = 15.7326835354  
X\_33 = 13.7887805892  
X\_34 = 3.2112194108  
X\_35 = 1.2673164645  
X\_36 = 1.1253629119  
X\_37 = 1.3594980948  
X\_38 = 1.6721275622  
X\_39 = 2.0011397160  
X\_40 = 2.3335710181  
X\_41 = 2.6667153743  
X\_42 = 3.0000058533  
X\_43 = 3.3333138921  
X\_44 = 3.6665636073  
X\_45 = 3.9995041445  
X\_46 = 4.3309571150  
X\_47 = 4.6552814305  
X\_48 = 4.9454500377  
X\_49 = 5.0719687578  
X\_50 = 4.4143937516  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1  
 Columns 34 through 50  
 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18  
X\_ 1 = 5.0810604182  
X\_ 2 = 6.4053020910  
X\_ 3 = 6.9454500368  
X\_ 4 = 7.3219480931  
X\_ 5 = 7.6642904287  
X\_ 6 = 7.9995040503  
X\_ 7 = 8.3332298226  
X\_ 8 = 8.6666450627  
X\_ 9 = 8.9999954910  
X\_10 = 9.3333323922  
X\_11 = 9.6666664703  
X\_12 = 9.9999999590  
X\_13 = 10.3333333248  
X\_14 = 10.6666666649  
X\_15 = 10.9999999996  
X\_16 = 11.3333333332  
X\_17 = 11.6666666665  
X\_18 = 11.9999999991  
X\_19 = 12.3333333292  
X\_20 = 12.6666666470  
X\_21 = 12.9999999058  
X\_22 = 13.3333328819  
X\_23 = 13.6666645039  
X\_24 = 13.9999896377  
X\_25 = 14.3332836846  
X\_26 = 14.6664287855  
X\_27 = 14.9988602430  
X\_28 = 15.3278724293  
X\_29 = 15.6405019034  
X\_30 = 15.8746370878  
X\_31 = 15.7326835354  
X\_32 = 13.7887805892  
X\_33 = 3.2112194108  
X\_34 = 1.2673164646  
X\_35 = 1.1253629122  
X\_36 = 1.3594980962  
X\_37 = 1.6721275688  
X\_38 = 2.0011397480  
X\_39 = 2.3335711712  
X\_40 = 2.6667161080  
X\_41 = 3.0000093689  
X\_42 = 3.3333307366  
X\_43 = 3.6666443139  
X\_44 = 3.9998908329  
X\_45 = 4.3328098505  
X\_46 = 4.6641584196  
X\_47 = 4.9879822473  
X\_48 = 5.2757528168  
X\_49 = 5.3907818368  
X\_50 = 4.6781563674  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2  
 Columns 34 through 50  
 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19  
X\_ 1 = 5.3448230340  
X\_ 2 = 6.7241151701  
X\_ 3 = 7.2757528166  
X\_ 4 = 7.6546489131  
X\_ 5 = 7.9974917488  
X\_ 6 = 8.3328098308  
X\_ 7 = 8.6665574053  
X\_ 8 = 8.9999771958  
X\_ 9 = 9.3333285738  
X\_10 = 9.6666656733  
X\_11 = 9.9999997927  
X\_12 = 10.3333332901  
X\_13 = 10.6666666576  
X\_14 = 10.9999999981  
X\_15 = 11.3333333329  
X\_16 = 11.6666666664  
X\_17 = 11.9999999991  
X\_18 = 12.3333333292  
X\_19 = 12.6666666470  
X\_20 = 12.9999999058  
X\_21 = 13.3333328819  
X\_22 = 13.6666645039  
X\_23 = 13.9999896377  
X\_24 = 14.3332836846  
X\_25 = 14.6664287855  
X\_26 = 14.9988602430  
X\_27 = 15.3278724293  
X\_28 = 15.6405019034  
X\_29 = 15.8746370878  
X\_30 = 15.7326835354  
X\_31 = 13.7887805892  
X\_32 = 3.2112194108  
X\_33 = 1.2673164646  
X\_34 = 1.1253629122  
X\_35 = 1.3594980965  
X\_36 = 1.6721275703  
X\_37 = 2.0011397551  
X\_38 = 2.3335712050  
X\_39 = 2.6667162698  
X\_40 = 3.0000101440  
X\_41 = 3.3333344504  
X\_42 = 3.6666621080  
X\_43 = 3.9999760898  
X\_44 = 4.3332183411  
X\_45 = 4.6661156155  
X\_46 = 4.9973597364  
X\_47 = 5.3206830666  
X\_48 = 5.6060555965  
X\_49 = 5.7095949159  
X\_50 = 4.9419189832  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3  
 Columns 34 through 50  
 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20  
X\_ 1 = 5.6085856499  
X\_ 2 = 7.0429282493  
X\_ 3 = 7.6060555965  
X\_ 4 = 7.9873497331  
X\_ 5 = 8.3306930689  
X\_ 6 = 8.6661156114  
X\_ 7 = 8.9998849881  
X\_ 8 = 9.3333093289  
X\_ 9 = 9.6666616567  
X\_10 = 9.9999989544  
X\_11 = 10.3333331151  
X\_12 = 10.6666666211  
X\_13 = 10.9999999905  
X\_14 = 11.3333333313  
X\_15 = 11.6666666661  
X\_16 = 11.9999999991  
X\_17 = 12.3333333292  
X\_18 = 12.6666666470  
X\_19 = 12.9999999058  
X\_20 = 13.3333328819  
X\_21 = 13.6666645039  
X\_22 = 13.9999896377  
X\_23 = 14.3332836846  
X\_24 = 14.6664287855  
X\_25 = 14.9988602430  
X\_26 = 15.3278724293  
X\_27 = 15.6405019034  
X\_28 = 15.8746370878  
X\_29 = 15.7326835354  
X\_30 = 13.7887805892  
X\_31 = 3.2112194108  
X\_32 = 1.2673164646  
X\_33 = 1.1253629122  
X\_34 = 1.3594980966  
X\_35 = 1.6721275706  
X\_36 = 2.0011397566  
X\_37 = 2.3335712124  
X\_38 = 2.6667163054  
X\_39 = 3.0000103145  
X\_40 = 3.3333352669  
X\_41 = 3.6666660201  
X\_42 = 3.9999948337  
X\_43 = 4.3333081484  
X\_44 = 4.6665459082  
X\_45 = 4.9994213928  
X\_46 = 5.3305610558  
X\_47 = 5.6533838864  
X\_48 = 5.9363583763  
X\_49 = 6.0284079951  
X\_50 = 5.2056815990  
  
The Solutions of the System:   
b =

Columns 1 through 33  
 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4  
 Columns 34 through 50  
 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21  
X\_ 1 = 5.8723482657  
X\_ 2 = 7.3617413284  
X\_ 3 = 7.9363583763  
X\_ 4 = 8.3200505531  
X\_ 5 = 8.6638943890  
X\_ 6 = 8.9994213920  
X\_ 7 = 9.3332125708  
X\_ 8 = 9.6666414621  
X\_ 9 = 9.9999947395  
X\_10 = 10.3333322354  
X\_11 = 10.6666664375  
X\_12 = 10.9999999522  
X\_13 = 11.3333333233  
X\_14 = 11.6666666644  
X\_15 = 11.9999999987  
X\_16 = 12.3333333291  
X\_17 = 12.6666666470  
X\_18 = 12.9999999058  
X\_19 = 13.3333328819  
X\_20 = 13.6666645039  
X\_21 = 13.9999896377  
X\_22 = 14.3332836846  
X\_23 = 14.6664287855  
X\_24 = 14.9988602430  
X\_25 = 15.3278724293  
X\_26 = 15.6405019034  
X\_27 = 15.8746370878  
X\_28 = 15.7326835354  
X\_29 = 13.7887805892  
X\_30 = 3.2112194108  
X\_31 = 1.2673164646  
X\_32 = 1.1253629122  
X\_33 = 1.3594980966  
X\_34 = 1.6721275707  
X\_35 = 2.0011397569  
X\_36 = 2.3335712140  
X\_37 = 2.6667163132  
X\_38 = 3.0000103518  
X\_39 = 3.3333354460  
X\_40 = 3.6666668780  
X\_41 = 3.9999989440  
X\_42 = 4.3333278420  
X\_43 = 4.6666402659  
X\_44 = 4.9998734877  
X\_45 = 5.3327271727  
X\_46 = 5.6637623758  
X\_47 = 5.9860847064  
X\_48 = 6.2666611561  
X\_49 = 6.3472210742  
X\_50 = 5.4694442148  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5  
 Columns 34 through 50  
 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22  
X\_ 1 = 6.1361108815  
X\_ 2 = 7.6805544075  
X\_ 3 = 8.2666611561  
X\_ 4 = 8.6527513730  
X\_ 5 = 8.9970957091  
X\_ 6 = 9.3327271725  
X\_ 7 = 9.6665401535  
X\_ 8 = 9.9999735952  
X\_ 9 = 10.3333278223  
X\_10 = 10.6666655165  
X\_11 = 10.9999997599  
X\_12 = 11.3333332832  
X\_13 = 11.6666666560  
X\_14 = 11.9999999970  
X\_15 = 12.3333333288  
X\_16 = 12.6666666469  
X\_17 = 12.9999999058  
X\_18 = 13.3333328819  
X\_19 = 13.6666645039  
X\_20 = 13.9999896377  
X\_21 = 14.3332836846  
X\_22 = 14.6664287855  
X\_23 = 14.9988602430  
X\_24 = 15.3278724293  
X\_25 = 15.6405019034  
X\_26 = 15.8746370878  
X\_27 = 15.7326835354  
X\_28 = 13.7887805892  
X\_29 = 3.2112194108  
X\_30 = 1.2673164646  
X\_31 = 1.1253629122  
X\_32 = 1.3594980966  
X\_33 = 1.6721275707  
X\_34 = 2.0011397570  
X\_35 = 2.3335712144  
X\_36 = 2.6667163149  
X\_37 = 3.0000103600  
X\_38 = 3.3333354851  
X\_39 = 3.6666670657  
X\_40 = 3.9999998432  
X\_41 = 4.3333321505  
X\_42 = 4.6666609093  
X\_43 = 4.9999723958  
X\_44 = 5.3332010698  
X\_45 = 5.6660329531  
X\_46 = 5.9969636959  
X\_47 = 6.3187855264  
X\_48 = 6.5969639359  
X\_49 = 6.6660341533  
X\_50 = 5.7332068307  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6  
 Columns 34 through 50  
 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
X\_ 1 = 6.3998734973  
X\_ 2 = 7.9993674867  
X\_ 3 = 8.5969639359  
X\_ 4 = 8.9854521930  
X\_ 5 = 9.3302970292  
X\_ 6 = 9.6660329531  
X\_ 7 = 9.9998677363  
X\_ 8 = 10.3333057283  
X\_ 9 = 10.6666609052  
X\_10 = 10.9999987975  
X\_11 = 11.3333330823  
X\_12 = 11.6666666141  
X\_13 = 11.9999999882  
X\_14 = 12.3333333269  
X\_15 = 12.6666666465  
X\_16 = 12.9999999057  
X\_17 = 13.3333328819  
X\_18 = 13.6666645039  
X\_19 = 13.9999896377  
X\_20 = 14.3332836846  
X\_21 = 14.6664287855  
X\_22 = 14.9988602430  
X\_23 = 15.3278724293  
X\_24 = 15.6405019034  
X\_25 = 15.8746370878  
X\_26 = 15.7326835354  
X\_27 = 13.7887805892  
X\_28 = 3.2112194108  
X\_29 = 1.2673164646  
X\_30 = 1.1253629122  
X\_31 = 1.3594980966  
X\_32 = 1.6721275707  
X\_33 = 2.0011397570  
X\_34 = 2.3335712145  
X\_35 = 2.6667163152  
X\_36 = 3.0000103618  
X\_37 = 3.3333354937  
X\_38 = 3.6666671066  
X\_39 = 4.0000000396  
X\_40 = 4.3333330911  
X\_41 = 4.6666654160  
X\_42 = 4.9999939888  
X\_43 = 5.3333045282  
X\_44 = 5.6665286524  
X\_45 = 5.9993387337  
X\_46 = 6.3301650160  
X\_47 = 6.6514863464  
X\_48 = 6.9272667158  
X\_49 = 6.9848472325  
X\_50 = 5.9969694465  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7  
 Columns 34 through 50  
 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24  
X\_ 1 = 6.6636361132  
X\_ 2 = 8.3181805658  
X\_ 3 = 8.9272667158  
X\_ 4 = 9.3181530130  
X\_ 5 = 9.6634983493  
X\_ 6 = 9.9993387337  
X\_ 7 = 10.3331953190  
X\_ 8 = 10.6666378614  
X\_ 9 = 10.9999939880  
X\_10 = 11.3333320785  
X\_11 = 11.6666664046  
X\_12 = 11.9999999445  
X\_13 = 12.3333333178  
X\_14 = 12.6666666446  
X\_15 = 12.9999999053  
X\_16 = 13.3333328818  
X\_17 = 13.6666645039  
X\_18 = 13.9999896377  
X\_19 = 14.3332836846  
X\_20 = 14.6664287855  
X\_21 = 14.9988602430  
X\_22 = 15.3278724293  
X\_23 = 15.6405019034  
X\_24 = 15.8746370878  
X\_25 = 15.7326835354

X\_26 = 13.7887805892  
X\_27 = 3.2112194108  
X\_28 = 1.2673164646  
X\_29 = 1.1253629122  
X\_30 = 1.3594980966  
X\_31 = 1.6721275707  
X\_32 = 2.0011397570  
X\_33 = 2.3335712145  
X\_34 = 2.6667163153  
X\_35 = 3.0000103622  
X\_36 = 3.3333354956  
X\_37 = 3.6666671156  
X\_38 = 4.0000000823  
X\_39 = 4.3333332961  
X\_40 = 4.6666663980  
X\_41 = 4.9999986938  
X\_42 = 5.3333270710  
X\_43 = 5.6666366612  
X\_44 = 5.9998562351  
X\_45 = 6.3326445142  
X\_46 = 6.6633663361  
X\_47 = 6.9841871663  
X\_48 = 7.2575694956  
X\_49 = 7.3036603116  
X\_50 = 6.2607320623  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8  
 Columns 34 through 50  
 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25  
X\_ 1 = 6.9273987290  
X\_ 2 = 8.6369936449  
X\_ 3 = 9.2575694956  
X\_ 4 = 9.6508538330  
X\_ 5 = 9.9966996694  
X\_ 6 = 10.3326445142  
X\_ 7 = 10.6665229017  
X\_ 8 = 10.9999699945  
X\_ 9 = 11.3333270708  
X\_10 = 11.6666653594  
X\_11 = 11.9999997263  
X\_12 = 12.3333332723  
X\_13 = 12.6666666351  
X\_14 = 12.9999999033  
X\_15 = 13.3333328814  
X\_16 = 13.6666645038  
X\_17 = 13.9999896377  
X\_18 = 14.3332836846  
X\_19 = 14.6664287855  
X\_20 = 14.9988602430  
X\_21 = 15.3278724293  
X\_22 = 15.6405019034  
X\_23 = 15.8746370878  
X\_24 = 15.7326835354  
X\_25 = 13.7887805892  
X\_26 = 3.2112194108  
X\_27 = 1.2673164646  
X\_28 = 1.1253629122  
X\_29 = 1.3594980966  
X\_30 = 1.6721275707  
X\_31 = 2.0011397570  
X\_32 = 2.3335712145  
X\_33 = 2.6667163153  
X\_34 = 3.0000103623  
X\_35 = 3.3333354960  
X\_36 = 3.6666671175  
X\_37 = 4.0000000916  
X\_38 = 4.3333333406  
X\_39 = 4.6666666116  
X\_40 = 4.9999997171  
X\_41 = 5.3333319742  
X\_42 = 5.6666601537  
X\_43 = 5.9999687943  
X\_44 = 6.3331838178  
X\_45 = 6.6659502948  
X\_46 = 6.9965676562  
X\_47 = 7.3168879863  
X\_48 = 7.5878722754  
X\_49 = 7.6224733907  
X\_50 = 6.5244946781  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9  
 Columns 34 through 50  
 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26  
X\_ 1 = 7.1911613448  
X\_ 2 = 8.9558067240  
X\_ 3 = 9.5878722754  
X\_ 4 = 9.9835546530  
X\_ 5 = 10.3299009896  
X\_ 6 = 10.6659502948  
X\_ 7 = 10.9998504845  
X\_ 8 = 11.3333021276  
X\_ 9 = 11.6666601535  
X\_10 = 11.9999986398  
X\_11 = 12.3333330455  
X\_12 = 12.6666665878  
X\_13 = 12.9999998934  
X\_14 = 13.3333328794  
X\_15 = 13.6666645034  
X\_16 = 13.9999896376  
X\_17 = 14.3332836846  
X\_18 = 14.6664287855  
X\_19 = 14.9988602430  
X\_20 = 15.3278724293  
X\_21 = 15.6405019034  
X\_22 = 15.8746370878  
X\_23 = 15.7326835354  
X\_24 = 13.7887805892  
X\_25 = 3.2112194108  
X\_26 = 1.2673164646  
X\_27 = 1.1253629122  
X\_28 = 1.3594980966  
X\_29 = 1.6721275707  
X\_30 = 2.0011397570  
X\_31 = 2.3335712145  
X\_32 = 2.6667163154  
X\_33 = 3.0000103623  
X\_34 = 3.3333354960  
X\_35 = 3.6666671179  
X\_36 = 4.0000000937  
X\_37 = 4.3333333503  
X\_38 = 4.6666666579  
X\_39 = 4.9999999394  
X\_40 = 5.3333330389  
X\_41 = 5.6666652551  
X\_42 = 5.9999932365  
X\_43 = 6.3333009274  
X\_44 = 6.6665114006  
X\_45 = 6.9992560754  
X\_46 = 7.3297689763  
X\_47 = 7.6495888063  
X\_48 = 7.9181750552  
X\_49 = 7.9412864698  
X\_50 = 6.7882572940  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10  
 Columns 34 through 50  
 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27  
X\_ 1 = 7.4549239606  
X\_ 2 = 9.2746198032  
X\_ 3 = 9.9181750552  
X\_ 4 = 10.3162554730  
X\_ 5 = 10.6631023097  
X\_ 6 = 10.9992560754  
X\_ 7 = 11.3331780672  
X\_ 8 = 11.6666342606  
X\_ 9 = 11.9999932356  
X\_10 = 12.3333319176  
X\_11 = 12.6666663524  
X\_12 = 12.9999998443  
X\_13 = 13.3333328691  
X\_14 = 13.6666645013  
X\_15 = 13.9999896372  
X\_16 = 14.3332836845  
X\_17 = 14.6664287855  
X\_18 = 14.9988602430  
X\_19 = 15.3278724293  
X\_20 = 15.6405019034  
X\_21 = 15.8746370878  
X\_22 = 15.7326835354  
X\_23 = 13.7887805892  
X\_24 = 3.2112194108  
X\_25 = 1.2673164646  
X\_26 = 1.1253629122  
X\_27 = 1.3594980966  
X\_28 = 1.6721275707  
X\_29 = 2.0011397570  
X\_30 = 2.3335712145  
X\_31 = 2.6667163154  
X\_32 = 3.0000103623  
X\_33 = 3.3333354961  
X\_34 = 3.6666671180  
X\_35 = 4.0000000941  
X\_36 = 4.3333333524  
X\_37 = 4.6666666680  
X\_38 = 4.9999999875  
X\_39 = 5.3333332697  
X\_40 = 5.6666663612  
X\_41 = 5.9999985361  
X\_42 = 6.3333263193  
X\_43 = 6.6666330605  
X\_44 = 6.9998389833  
X\_45 = 7.3325618559  
X\_46 = 7.6629702964  
X\_47 = 7.9822896263  
X\_48 = 8.2484778351  
X\_49 = 8.2600995490  
X\_50 = 7.0520199098  
  
The Solutions of the System:   
b =  
 Columns 1 through 33

29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11  
 Columns 34 through 50  
 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28  
X\_ 1 = 7.7186865765  
X\_ 2 = 9.5934328823  
X\_ 3 = 10.2484778351  
X\_ 4 = 10.6489562930  
X\_ 5 = 10.9963036298  
X\_ 6 = 11.3325618559  
X\_ 7 = 11.6665056498  
X\_ 8 = 11.9999663930  
X\_ 9 = 12.3333263152  
X\_10 = 12.6666651831  
X\_11 = 12.9999996003  
X\_12 = 13.3333328182  
X\_13 = 13.6666644906  
X\_14 = 13.9999896349  
X\_15 = 14.3332836841  
X\_16 = 14.6664287854  
X\_17 = 14.9988602429  
X\_18 = 15.3278724293  
X\_19 = 15.6405019034  
X\_20 = 15.8746370878  
X\_21 = 15.7326835354  
X\_22 = 13.7887805892  
X\_23 = 3.2112194108  
X\_24 = 1.2673164646  
X\_25 = 1.1253629122  
X\_26 = 1.3594980966  
X\_27 = 1.6721275707  
X\_28 = 2.0011397570  
X\_29 = 2.3335712145  
X\_30 = 2.6667163154  
X\_31 = 3.0000103623  
X\_32 = 3.3333354961  
X\_33 = 3.6666671181  
X\_34 = 4.0000000942  
X\_35 = 4.3333333529  
X\_36 = 4.6666666702  
X\_37 = 4.9999999980  
X\_38 = 5.3333333197  
X\_39 = 5.6666666007  
X\_40 = 5.9999996836  
X\_41 = 6.3333318171  
X\_42 = 6.6666594022  
X\_43 = 6.9999651936  
X\_44 = 7.3331665660  
X\_45 = 7.6658676365  
X\_46 = 7.9961716166  
X\_47 = 8.3149904463  
X\_48 = 8.5787806149  
X\_49 = 8.5789126281  
X\_50 = 7.3157825256  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12  
 Columns 34 through 50  
 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29  
X\_ 1 = 7.9824491923  
X\_ 2 = 9.9122459614  
X\_ 3 = 10.5787806149  
X\_ 4 = 10.9816571129  
X\_ 5 = 11.3295049499  
X\_ 6 = 11.6658676363  
X\_ 7 = 11.9998332318  
X\_ 8 = 12.3332985229  
X\_ 9 = 12.6666593825  
X\_10 = 12.9999983896  
X\_11 = 13.3333325655  
X\_12 = 13.6666644379  
X\_13 = 13.9999896239  
X\_14 = 14.3332836818  
X\_15 = 14.6664287849  
X\_16 = 14.9988602428  
X\_17 = 15.3278724292  
X\_18 = 15.6405019034  
X\_19 = 15.8746370878  
X\_20 = 15.7326835354  
X\_21 = 13.7887805892  
X\_22 = 3.2112194108  
X\_23 = 1.2673164646  
X\_24 = 1.1253629122  
X\_25 = 1.3594980966  
X\_26 = 1.6721275707  
X\_27 = 2.0011397570  
X\_28 = 2.3335712145  
X\_29 = 2.6667163154  
X\_30 = 3.0000103623  
X\_31 = 3.3333354961  
X\_32 = 3.6666671181  
X\_33 = 4.0000000942  
X\_34 = 4.3333333530  
X\_35 = 4.6666666706  
X\_36 = 5.0000000002  
X\_37 = 5.3333333305  
X\_38 = 5.6666666524  
X\_39 = 5.9999999317  
X\_40 = 6.3333330060  
X\_41 = 6.6666650982  
X\_42 = 6.9999924850  
X\_43 = 7.3332973268  
X\_44 = 7.6664941488  
X\_45 = 7.9991734171  
X\_46 = 8.3293729367  
X\_47 = 8.6476912663  
X\_48 = 8.9090833947  
X\_49 = 8.8977257072  
X\_50 = 7.5795451414  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13  
 Columns 34 through 50  
 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
X\_ 1 = 8.2462118081  
X\_ 2 = 10.2310590406  
X\_ 3 = 10.9090833947  
X\_ 4 = 11.3143579329  
X\_ 5 = 11.6627062698  
X\_ 6 = 11.9991734162  
X\_ 7 = 12.3331608113  
X\_ 8 = 12.6666306404  
X\_ 9 = 12.9999923908  
X\_10 = 13.3333313135  
X\_11 = 13.6666641766  
X\_12 = 13.9999895694  
X\_13 = 14.3332836704  
X\_14 = 14.6664287825  
X\_15 = 14.9988602423  
X\_16 = 15.3278724291  
X\_17 = 15.6405019034  
X\_18 = 15.8746370878  
X\_19 = 15.7326835354  
X\_20 = 13.7887805892  
X\_21 = 3.2112194108  
X\_22 = 1.2673164646  
X\_23 = 1.1253629122  
X\_24 = 1.3594980966  
X\_25 = 1.6721275707  
X\_26 = 2.0011397570  
X\_27 = 2.3335712145  
X\_28 = 2.6667163154  
X\_29 = 3.0000103623  
X\_30 = 3.3333354961  
X\_31 = 3.6666671181  
X\_32 = 4.0000000942  
X\_33 = 4.3333333530  
X\_34 = 4.6666666707  
X\_35 = 5.0000000007  
X\_36 = 5.3333333329  
X\_37 = 5.6666666636  
X\_38 = 5.9999999853  
X\_39 = 6.3333332627  
X\_40 = 6.6666663284  
X\_41 = 6.9999983792  
X\_42 = 7.3333255678  
X\_43 = 7.6666294599  
X\_44 = 7.9998217315  
X\_45 = 8.3324791977  
X\_46 = 8.6625742568  
X\_47 = 8.9803920863  
X\_48 = 9.2393861745  
X\_49 = 9.2165387864  
X\_50 = 7.8433077573  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14  
 Columns 34 through 50  
 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31  
X\_ 1 = 8.5099744239  
X\_ 2 = 10.5498721197  
X\_ 3 = 11.2393861745  
X\_ 4 = 11.6470587527  
X\_ 5 = 11.9959075893  
X\_ 6 = 12.3324791936  
X\_ 7 = 12.6664883785  
X\_ 8 = 12.9999626990  
X\_ 9 = 13.3333251164  
X\_10 = 13.6666628832  
X\_11 = 13.9999892994  
X\_12 = 14.3332836140  
X\_13 = 14.6664287708  
X\_14 = 14.9988602399  
X\_15 = 15.3278724286  
X\_16 = 15.6405019033  
X\_17 = 15.8746370877  
X\_18 = 15.7326835354  
X\_19 = 13.7887805892  
X\_20 = 3.2112194108  
X\_21 = 1.2673164646  
X\_22 = 1.1253629122  
X\_23 = 1.3594980966  
X\_24 = 1.6721275707  
X\_25 = 2.0011397570  
X\_26 = 2.3335712145

X\_27 = 2.6667163154  
X\_28 = 3.0000103623  
X\_29 = 3.3333354961  
X\_30 = 3.6666671181  
X\_31 = 4.0000000942  
X\_32 = 4.3333333530  
X\_33 = 4.6666666708  
X\_34 = 5.0000000008  
X\_35 = 5.3333333334  
X\_36 = 5.6666666660  
X\_37 = 5.9999999968  
X\_38 = 6.3333333181  
X\_39 = 6.6666665938  
X\_40 = 6.9999996508  
X\_41 = 7.3333316603  
X\_42 = 7.6666586507  
X\_43 = 7.9999615930  
X\_44 = 8.3331493142  
X\_45 = 8.6657849782  
X\_46 = 8.9957755769  
X\_47 = 9.3130929062  
X\_48 = 9.5696889543  
X\_49 = 9.5353518655  
X\_50 = 8.1070703731  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
 Columns 34 through 50  
 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32  
X\_ 1 = 8.7737370398  
X\_ 2 = 10.8686851988  
X\_ 3 = 11.5696889542  
X\_ 4 = 11.9797595721  
X\_ 5 = 12.3291089061  
X\_ 6 = 12.6657849586  
X\_ 7 = 12.9998158867  
X\_ 8 = 13.3332944749  
X\_ 9 = 13.6666564879  
X\_10 = 13.9999879647  
X\_11 = 14.3332833355  
X\_12 = 14.6664287126  
X\_13 = 14.9988602277  
X\_14 = 15.3278724261  
X\_15 = 15.6405019027  
X\_16 = 15.8746370876  
X\_17 = 15.7326835354  
X\_18 = 13.7887805892  
X\_19 = 3.2112194108  
X\_20 = 1.2673164646  
X\_21 = 1.1253629122  
X\_22 = 1.3594980966  
X\_23 = 1.6721275707  
X\_24 = 2.0011397570  
X\_25 = 2.3335712145  
X\_26 = 2.6667163154  
X\_27 = 3.0000103623  
X\_28 = 3.3333354961  
X\_29 = 3.6666671181  
X\_30 = 4.0000000942  
X\_31 = 4.3333333530  
X\_32 = 4.6666666708  
X\_33 = 5.0000000009  
X\_34 = 5.3333333335  
X\_35 = 5.6666666666  
X\_36 = 5.9999999993  
X\_37 = 6.3333333301  
X\_38 = 6.6666666510  
X\_39 = 6.9999999248  
X\_40 = 7.3333329732  
X\_41 = 7.6666649413  
X\_42 = 7.9999917335  
X\_43 = 8.3332937261  
X\_44 = 8.6664768970  
X\_45 = 8.9990907588  
X\_46 = 9.3289768970  
X\_47 = 9.6457937262  
X\_48 = 9.8999917342  
X\_49 = 9.8541649446  
X\_50 = 8.3708329889  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
 Columns 34 through 50  
 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33  
X\_ 1 = 9.0374996556  
X\_ 2 = 11.1874982778  
X\_ 3 = 11.8999917333  
X\_ 4 = 12.3124603888  
X\_ 5 = 12.6623102107  
X\_ 6 = 12.9990906646  
X\_ 7 = 13.3331431123  
X\_ 8 = 13.6666248967  
X\_ 9 = 13.9999813712  
X\_10 = 14.3332819593  
X\_11 = 14.6664284254  
X\_12 = 14.9988601678  
X\_13 = 15.3278724136  
X\_14 = 15.6405019001  
X\_15 = 15.8746370871  
X\_16 = 15.7326835353  
X\_17 = 13.7887805892  
X\_18 = 3.2112194108  
X\_19 = 1.2673164646  
X\_20 = 1.1253629122  
X\_21 = 1.3594980966  
X\_22 = 1.6721275707  
X\_23 = 2.0011397570  
X\_24 = 2.3335712145  
X\_25 = 2.6667163154  
X\_26 = 3.0000103623  
X\_27 = 3.3333354961  
X\_28 = 3.6666671181  
X\_29 = 4.0000000942  
X\_30 = 4.3333333530  
X\_31 = 4.6666666708  
X\_32 = 5.0000000009  
X\_33 = 5.3333333335  
X\_34 = 5.6666666667  
X\_35 = 5.9999999999  
X\_36 = 6.3333333326  
X\_37 = 6.6666666633  
X\_38 = 6.9999999838  
X\_39 = 7.3333332559  
X\_40 = 7.6666662957  
X\_41 = 7.9999982224  
X\_42 = 8.3333248163  
X\_43 = 8.6666258592  
X\_44 = 8.9998044797  
X\_45 = 9.3323965394  
X\_46 = 9.6621782171  
X\_47 = 9.9784945462  
X\_48 = 10.2302945140  
X\_49 = 10.1729780237  
X\_50 = 8.6345956047  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17  
 Columns 34 through 50  
 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34  
X\_ 1 = 9.3012622712  
X\_ 2 = 11.5063113562  
X\_ 3 = 12.2302945099  
X\_ 4 = 12.6451611932  
X\_ 5 = 12.9955114562  
X\_ 6 = 13.3323960880  
X\_ 7 = 13.6664689836  
X\_ 8 = 13.9999488303  
X\_ 9 = 14.3332751676  
X\_10 = 14.6664270079  
X\_11 = 14.9988598720  
X\_12 = 15.3278723518  
X\_13 = 15.6405018872  
X\_14 = 15.8746370844  
X\_15 = 15.7326835347  
X\_16 = 13.7887805891  
X\_17 = 3.2112194107  
X\_18 = 1.2673164646  
X\_19 = 1.1253629122  
X\_20 = 1.3594980966  
X\_21 = 1.6721275707  
X\_22 = 2.0011397570  
X\_23 = 2.3335712145  
X\_24 = 2.6667163154  
X\_25 = 3.0000103623  
X\_26 = 3.3333354961  
X\_27 = 3.6666671181  
X\_28 = 4.0000000942  
X\_29 = 4.3333333530  
X\_30 = 4.6666666708  
X\_31 = 5.0000000009  
X\_32 = 5.3333333335  
X\_33 = 5.6666666667  
X\_34 = 6.0000000000  
X\_35 = 6.3333333332  
X\_36 = 6.6666666659  
X\_37 = 6.9999999965  
X\_38 = 7.3333333167  
X\_39 = 7.6666665870  
X\_40 = 7.9999996181  
X\_41 = 8.3333315034  
X\_42 = 8.6666578992  
X\_43 = 8.9999579923  
X\_44 = 9.3331320625  
X\_45 = 9.6657023199  
X\_46 = 9.9953795372  
X\_47 = 10.3111953662  
X\_48 = 10.5605972938  
X\_49 = 10.4917911029  
X\_50 = 8.8983582206  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Columns 34 through 50  
 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35  
X\_ 1 = 9.5650248864  
X\_ 2 = 11.8251244321  
X\_ 3 = 12.5605972742  
X\_ 4 = 12.9778619387  
X\_ 5 = 13.3287124192  
X\_ 6 = 13.6657001572  
X\_ 7 = 13.9997883668  
X\_ 8 = 14.3332416770  
X\_ 9 = 14.6664200180  
X\_10 = 14.9988584131  
X\_11 = 15.3278720474  
X\_12 = 15.6405018237  
X\_13 = 15.8746370711  
X\_14 = 15.7326835319  
X\_15 = 13.7887805885  
X\_16 = 3.2112194106  
X\_17 = 1.2673164646  
X\_18 = 1.1253629122  
X\_19 = 1.3594980966  
X\_20 = 1.6721275707  
X\_21 = 2.0011397570  
X\_22 = 2.3335712145  
X\_23 = 2.6667163154  
X\_24 = 3.0000103623  
X\_25 = 3.3333354961  
X\_26 = 3.6666671181  
X\_27 = 4.0000000942  
X\_28 = 4.3333333530  
X\_29 = 4.6666666708  
X\_30 = 5.0000000009  
X\_31 = 5.3333333335  
X\_32 = 5.6666666667  
X\_33 = 6.0000000000  
X\_34 = 6.3333333333  
X\_35 = 6.6666666665  
X\_36 = 6.9999999993  
X\_37 = 7.3333333298  
X\_38 = 7.6666666496  
X\_39 = 7.9999999180  
X\_40 = 8.3333329405  
X\_41 = 8.6666647845  
X\_42 = 8.9999909820  
X\_43 = 9.3332901254  
X\_44 = 9.6664596452  
X\_45 = 9.9990081005  
X\_46 = 10.3285808573  
X\_47 = 10.6438961862  
X\_48 = 10.8909000736  
X\_49 = 10.8106041820  
X\_50 = 9.1621208364  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 37 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19  
 Columns 34 through 50  
 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36  
X\_ 1 = 9.8287874991  
X\_ 2 = 12.1439374957  
X\_ 3 = 12.8908999794  
X\_ 4 = 13.3105624015  
X\_ 5 = 13.6619120279  
X\_ 6 = 13.9989977382  
X\_ 7 = 14.3330766632  
X\_ 8 = 14.6663855776  
X\_ 9 = 14.9988512249  
X\_10 = 15.3278705471  
X\_11 = 15.6405015106  
X\_12 = 15.8746370058  
X\_13 = 15.7326835183  
X\_14 = 13.7887805857  
X\_15 = 3.2112194100  
X\_16 = 1.2673164644  
X\_17 = 1.1253629122  
X\_18 = 1.3594980966  
X\_19 = 1.6721275707  
X\_20 = 2.0011397570  
X\_21 = 2.3335712145  
X\_22 = 2.6667163154  
X\_23 = 3.0000103623  
X\_24 = 3.3333354961  
X\_25 = 3.6666671181  
X\_26 = 4.0000000942  
X\_27 = 4.3333333530  
X\_28 = 4.6666666708  
X\_29 = 5.0000000009  
X\_30 = 5.3333333335  
X\_31 = 5.6666666667  
X\_32 = 6.0000000000  
X\_33 = 6.3333333333  
X\_34 = 6.6666666666  
X\_35 = 6.9999999998  
X\_36 = 7.3333333326  
X\_37 = 7.6666666630  
X\_38 = 7.9999999824  
X\_39 = 8.3333332491  
X\_40 = 8.6666662629  
X\_41 = 8.9999980655  
X\_42 = 9.3333240648  
X\_43 = 9.6666222585  
X\_44 = 9.9997872279  
X\_45 = 10.3323138811  
X\_46 = 10.6617821775  
X\_47 = 10.9765970062  
X\_48 = 11.2212028535  
X\_49 = 11.1294172611  
X\_50 = 9.4258834522  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 38 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20  
 Columns 34 through 50  
 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37  
X\_ 1 = 10.0925501001  
X\_ 2 = 12.4627505004  
X\_ 3 = 13.2212024021  
X\_ 4 = 13.6432615101  
X\_ 5 = 13.9951051485  
X\_ 6 = 14.3322642324  
X\_ 7 = 14.6662160134  
X\_ 8 = 14.9988158348  
X\_ 9 = 15.3278631608  
X\_10 = 15.6404999690  
X\_11 = 15.8746366840  
X\_12 = 15.7326834511  
X\_13 = 13.7887805716  
X\_14 = 3.2112194071  
X\_15 = 1.2673164638  
X\_16 = 1.1253629121  
X\_17 = 1.3594980966  
X\_18 = 1.6721275707  
X\_19 = 2.0011397570  
X\_20 = 2.3335712145  
X\_21 = 2.6667163154  
X\_22 = 3.0000103623  
X\_23 = 3.3333354961  
X\_24 = 3.6666671181  
X\_25 = 4.0000000942  
X\_26 = 4.3333333530  
X\_27 = 4.6666666708  
X\_28 = 5.0000000009  
X\_29 = 5.3333333335  
X\_30 = 5.6666666667  
X\_31 = 6.0000000000  
X\_32 = 6.3333333333  
X\_33 = 6.6666666667  
X\_34 = 7.0000000000  
X\_35 = 7.3333333332  
X\_36 = 7.6666666659  
X\_37 = 7.9999999962  
X\_38 = 8.3333333153  
X\_39 = 8.6666665801  
X\_40 = 8.9999995853  
X\_41 = 9.3333313466  
X\_42 = 9.6666571477  
X\_43 = 9.9999543917  
X\_44 = 10.3331148107  
X\_45 = 10.6656196616  
X\_46 = 10.9949834976  
X\_47 = 11.3092978262  
X\_48 = 11.5515056333  
X\_49 = 11.4482303403  
X\_50 = 9.6896460681  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 39 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21  
 Columns 34 through 50  
 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38  
X\_ 1 = 10.3563126446  
X\_ 2 = 12.7815632231  
X\_ 3 = 13.5515034707  
X\_ 4 = 13.9759541306  
X\_ 5 = 14.3282671822  
X\_ 6 = 14.6653817805  
X\_ 7 = 14.9986417203  
X\_ 8 = 15.3278268209  
X\_ 9 = 15.6404923844  
X\_10 = 15.8746351010  
X\_11 = 15.7326831207  
X\_12 = 13.7887805027  
X\_13 = 3.2112193927  
X\_14 = 1.2673164608  
X\_15 = 1.1253629115  
X\_16 = 1.3594980964  
X\_17 = 1.6721275707  
X\_18 = 2.0011397570  
X\_19 = 2.3335712145  
X\_20 = 2.6667163154  
X\_21 = 3.0000103623  
X\_22 = 3.3333354961  
X\_23 = 3.6666671181  
X\_24 = 4.0000000942  
X\_25 = 4.3333333530  
X\_26 = 4.6666666708  
X\_27 = 5.0000000009

X\_28 = 5.3333333335  
X\_29 = 5.6666666667  
X\_30 = 6.0000000000  
X\_31 = 6.3333333333  
X\_32 = 6.6666666667  
X\_33 = 7.0000000000  
X\_34 = 7.3333333333  
X\_35 = 7.6666666665  
X\_36 = 7.9999999992  
X\_37 = 8.3333333295  
X\_38 = 8.6666666481  
X\_39 = 8.9999999112  
X\_40 = 9.3333329078  
X\_41 = 9.6666646277  
X\_42 = 9.9999902305  
X\_43 = 10.3332865248  
X\_44 = 10.6664423934  
X\_45 = 10.9989254422  
X\_46 = 11.3281848177  
X\_47 = 11.6419986462  
X\_48 = 11.8818084131  
X\_49 = 11.7670434194  
X\_50 = 9.9534086839  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 40 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22  
 Columns 34 through 50  
 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39  
X\_ 1 = 10.6200749188  
X\_ 2 = 13.1003745941  
X\_ 3 = 13.8817980517  
X\_ 4 = 14.3086156643  
X\_ 5 = 14.6612802699  
X\_ 6 = 14.9977856852  
X\_ 7 = 15.3276481560  
X\_ 8 = 15.6404550949  
X\_ 9 = 15.8746273182  
X\_10 = 15.7326814964  
X\_11 = 13.7887801637  
X\_12 = 3.2112193219  
X\_13 = 1.2673164461  
X\_14 = 1.1253629084  
X\_15 = 1.3594980958  
X\_16 = 1.6721275706  
X\_17 = 2.0011397570  
X\_18 = 2.3335712145  
X\_19 = 2.6667163154  
X\_20 = 3.0000103623  
X\_21 = 3.3333354961  
X\_22 = 3.6666671181  
X\_23 = 4.0000000942  
X\_24 = 4.3333333530  
X\_25 = 4.6666666708  
X\_26 = 5.0000000009  
X\_27 = 5.3333333335  
X\_28 = 5.6666666667  
X\_29 = 6.0000000000  
X\_30 = 6.3333333333  
X\_31 = 6.6666666667  
X\_32 = 7.0000000000  
X\_33 = 7.3333333333  
X\_34 = 7.6666666666  
X\_35 = 7.9999999998  
X\_36 = 8.3333333325  
X\_37 = 8.6666666627  
X\_38 = 8.9999999810  
X\_39 = 9.3333332422  
X\_40 = 9.6666662302  
X\_41 = 9.9999979087  
X\_42 = 10.3333233133  
X\_43 = 10.6666186579  
X\_44 = 10.9997699761  
X\_45 = 11.3322312228  
X\_46 = 11.6613861378  
X\_47 = 11.9746994661  
X\_48 = 12.2121111929  
X\_49 = 12.0858564985  
X\_50 = 10.2171712997  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 41 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
 Columns 34 through 50  
 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40  
X\_ 1 = 10.8838358978  
X\_ 2 = 13.4191794892  
X\_ 3 = 14.2120615484  
X\_ 4 = 14.6411282525  
X\_ 5 = 14.9935797143  
X\_ 6 = 15.3267703188  
X\_ 7 = 15.6402718795  
X\_ 8 = 15.8745890790  
X\_ 9 = 15.7326735154  
X\_10 = 13.7887784979  
X\_11 = 3.2112189743  
X\_12 = 1.2673163735  
X\_13 = 1.1253628932  
X\_14 = 1.3594980926  
X\_15 = 1.6721275699  
X\_16 = 2.0011397569  
X\_17 = 2.3335712144  
X\_18 = 2.6667163153  
X\_19 = 3.0000103623  
X\_20 = 3.3333354961  
X\_21 = 3.6666671181  
X\_22 = 4.0000000942  
X\_23 = 4.3333333530  
X\_24 = 4.6666666708  
X\_25 = 5.0000000009  
X\_26 = 5.3333333335  
X\_27 = 5.6666666667  
X\_28 = 6.0000000000  
X\_29 = 6.3333333333  
X\_30 = 6.6666666667  
X\_31 = 7.0000000000  
X\_32 = 7.3333333333  
X\_33 = 7.6666666667  
X\_34 = 8.0000000000  
X\_35 = 8.3333333332  
X\_36 = 8.6666666658  
X\_37 = 8.9999999959  
X\_38 = 9.3333333138  
X\_39 = 9.6666665733  
X\_40 = 9.9999995526  
X\_41 = 10.3333311898  
X\_42 = 10.6666563962  
X\_43 = 10.9999507910  
X\_44 = 11.3330975589  
X\_45 = 11.6655370034  
X\_46 = 11.9945874579  
X\_47 = 12.3074002861  
X\_48 = 12.5424139728  
X\_49 = 12.4046695777  
X\_50 = 10.4809339155  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 42 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24  
 Columns 34 through 50  
 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41  
X\_ 1 = 11.1475906713  
X\_ 2 = 13.7379533565  
X\_ 3 = 14.5421761113  
X\_ 4 = 14.9729271999  
X\_ 5 = 15.3224598880  
X\_ 6 = 15.6393722403  
X\_ 7 = 15.8744013133  
X\_ 8 = 15.7326343264  
X\_ 9 = 13.7887703187  
X\_10 = 3.2112172672  
X\_11 = 1.2673160172  
X\_12 = 1.1253628189  
X\_13 = 1.3594980771  
X\_14 = 1.6721275667  
X\_15 = 2.0011397562  
X\_16 = 2.3335712143  
X\_17 = 2.6667163153  
X\_18 = 3.0000103623  
X\_19 = 3.3333354961  
X\_20 = 3.6666671181  
X\_21 = 4.0000000942  
X\_22 = 4.3333333530  
X\_23 = 4.6666666708  
X\_24 = 5.0000000009  
X\_25 = 5.3333333335  
X\_26 = 5.6666666667  
X\_27 = 6.0000000000  
X\_28 = 6.3333333333  
X\_29 = 6.6666666667  
X\_30 = 7.0000000000  
X\_31 = 7.3333333333  
X\_32 = 7.6666666667  
X\_33 = 8.0000000000  
X\_34 = 8.3333333333  
X\_35 = 8.6666666665  
X\_36 = 8.9999999991  
X\_37 = 9.3333333292  
X\_38 = 9.6666666467  
X\_39 = 9.9999999043  
X\_40 = 10.3333328750  
X\_41 = 10.6666644708  
X\_42 = 10.9999894790  
X\_43 = 11.3332829241  
X\_44 = 11.6664251416  
X\_45 = 11.9988427839  
X\_46 = 12.3277887780  
X\_47 = 12.6401011061  
X\_48 = 12.8727167526  
X\_49 = 12.7234826568  
X\_50 = 10.7446965314  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 43 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25  
 Columns 34 through 50

26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42  
X\_ 1 = 11.4113157121  
X\_ 2 = 14.0565785604  
X\_ 3 = 14.8715770898  
X\_ 4 = 15.3013068884  
X\_ 5 = 15.6349573522  
X\_ 6 = 15.8734798725  
X\_ 7 = 15.7324420105  
X\_ 8 = 13.7887301801  
X\_ 9 = 3.2112088898  
X\_10 = 1.2673142687  
X\_11 = 1.1253624539  
X\_12 = 1.3594980009  
X\_13 = 1.6721275508  
X\_14 = 2.0011397529  
X\_15 = 2.3335712136  
X\_16 = 2.6667163152  
X\_17 = 3.0000103622  
X\_18 = 3.3333354961  
X\_19 = 3.6666671181  
X\_20 = 4.0000000942  
X\_21 = 4.3333333530  
X\_22 = 4.6666666708  
X\_23 = 5.0000000009  
X\_24 = 5.3333333335  
X\_25 = 5.6666666667  
X\_26 = 6.0000000000  
X\_27 = 6.3333333333  
X\_28 = 6.6666666667  
X\_29 = 7.0000000000  
X\_30 = 7.3333333333  
X\_31 = 7.6666666667  
X\_32 = 8.0000000000  
X\_33 = 8.3333333333  
X\_34 = 8.6666666666  
X\_35 = 8.9999999998  
X\_36 = 9.3333333324  
X\_37 = 9.6666666624  
X\_38 = 9.9999999796  
X\_39 = 10.3333332354  
X\_40 = 10.6666661975  
X\_41 = 10.9999977519  
X\_42 = 11.3333225618  
X\_43 = 11.6666150572  
X\_44 = 11.9997527243  
X\_45 = 12.3321485645  
X\_46 = 12.6609900981  
X\_47 = 12.9728019261  
X\_48 = 13.2030195324  
X\_49 = 13.0422957359  
X\_50 = 11.0084591472  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 44 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26  
 Columns 34 through 50  
 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43  
X\_ 1 = 11.6748982950  
X\_ 2 = 14.3744914749  
X\_ 3 = 15.1975590797  
X\_ 4 = 15.6133039237  
X\_ 5 = 15.8689605389  
X\_ 6 = 15.7314987707  
X\_ 7 = 13.7885333144  
X\_ 8 = 3.2111678015  
X\_ 9 = 1.2673056931  
X\_10 = 1.1253606641  
X\_11 = 1.3594976274  
X\_12 = 1.6721274728  
X\_13 = 2.0011397366  
X\_14 = 2.3335712102  
X\_15 = 2.6667163145  
X\_16 = 3.0000103621  
X\_17 = 3.3333354960  
X\_18 = 3.6666671180  
X\_19 = 4.0000000942  
X\_20 = 4.3333333530  
X\_21 = 4.6666666708  
X\_22 = 5.0000000009  
X\_23 = 5.3333333335  
X\_24 = 5.6666666667  
X\_25 = 6.0000000000  
X\_26 = 6.3333333333  
X\_27 = 6.6666666667  
X\_28 = 7.0000000000  
X\_29 = 7.3333333333  
X\_30 = 7.6666666667  
X\_31 = 8.0000000000  
X\_32 = 8.3333333333  
X\_33 = 8.6666666667  
X\_34 = 9.0000000000  
X\_35 = 9.3333333331  
X\_36 = 9.6666666658  
X\_37 = 9.9999999956  
X\_38 = 10.3333333124  
X\_39 = 10.6666665665  
X\_40 = 10.9999995199  
X\_41 = 11.3333310329  
X\_42 = 11.6666556447  
X\_43 = 11.9999471903  
X\_44 = 12.3330803071  
X\_45 = 12.6654543451  
X\_46 = 12.9941914182  
X\_47 = 13.3055027461  
X\_48 = 13.5333223122  
X\_49 = 13.3611088150  
X\_50 = 11.2722217630  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 45 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27  
 Columns 34 through 50  
 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44  
X\_ 1 = 11.9377983213  
X\_ 2 = 14.6889916066  
X\_ 3 = 15.5071597117  
X\_ 4 = 15.8468069519  
X\_ 5 = 15.7268750478  
X\_ 6 = 13.7875682873  
X\_ 7 = 3.2109663886  
X\_ 8 = 1.2672636558  
X\_ 9 = 1.1253518904  
X\_10 = 1.3594957962  
X\_11 = 1.6721270906  
X\_12 = 2.0011396568  
X\_13 = 2.3335711936  
X\_14 = 2.6667163110  
X\_15 = 3.0000103614  
X\_16 = 3.3333354959  
X\_17 = 3.6666671180  
X\_18 = 4.0000000942  
X\_19 = 4.3333333530  
X\_20 = 4.6666666708  
X\_21 = 5.0000000009  
X\_22 = 5.3333333335  
X\_23 = 5.6666666667  
X\_24 = 6.0000000000  
X\_25 = 6.3333333333  
X\_26 = 6.6666666667  
X\_27 = 7.0000000000  
X\_28 = 7.3333333333  
X\_29 = 7.6666666667  
X\_30 = 8.0000000000  
X\_31 = 8.3333333333  
X\_32 = 8.6666666667  
X\_33 = 9.0000000000  
X\_34 = 9.3333333333  
X\_35 = 9.6666666665  
X\_36 = 9.9999999991  
X\_37 = 10.3333333289  
X\_38 = 10.6666666453  
X\_39 = 10.9999998975  
X\_40 = 11.3333328423  
X\_41 = 11.6666643140  
X\_42 = 11.9999887275  
X\_43 = 12.3332793235  
X\_44 = 12.6664078898  
X\_45 = 12.9987601256  
X\_46 = 13.3273927383  
X\_47 = 13.6382035661  
X\_48 = 13.8636250921  
X\_49 = 13.6799218942  
X\_50 = 11.5359843788  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 46 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28  
 Columns 34 through 50  
 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45  
X\_ 1 = 12.1974280226  
X\_ 2 = 14.9871401129  
X\_ 3 = 15.7382725421  
X\_ 4 = 15.7042225975  
X\_ 5 = 13.7828404456  
X\_ 6 = 3.2099796306  
X\_ 7 = 1.2670577074  
X\_ 8 = 1.1253089065  
X\_ 9 = 1.3594868249  
X\_10 = 1.6721252182  
X\_11 = 2.0011392660  
X\_12 = 2.3335711120  
X\_13 = 2.6667162940  
X\_14 = 3.0000103578  
X\_15 = 3.3333354951  
X\_16 = 3.6666671179  
X\_17 = 4.0000000942  
X\_18 = 4.3333333530  
X\_19 = 4.6666666708  
X\_20 = 5.0000000009  
X\_21 = 5.3333333335  
X\_22 = 5.6666666667  
X\_23 = 6.0000000000  
X\_24 = 6.3333333333  
X\_25 = 6.6666666667  
X\_26 = 7.0000000000  
X\_27 = 7.3333333333  
X\_28 = 7.6666666667

X\_29 = 8.0000000000  
X\_30 = 8.3333333333  
X\_31 = 8.6666666667  
X\_32 = 9.0000000000  
X\_33 = 9.3333333333  
X\_34 = 9.6666666666  
X\_35 = 9.9999999998  
X\_36 = 10.3333333324  
X\_37 = 10.6666666621  
X\_38 = 10.9999999781  
X\_39 = 11.3333332286  
X\_40 = 11.6666661647  
X\_41 = 11.9999975950  
X\_42 = 12.3333218103  
X\_43 = 12.6666114566  
X\_44 = 12.9997354726  
X\_45 = 13.3320659062  
X\_46 = 13.6605940585  
X\_47 = 13.9709043861  
X\_48 = 14.1939278719  
X\_49 = 13.9987349733  
X\_50 = 11.7997469947  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 47 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29  
 Columns 34 through 50  
 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46  
X\_ 1 = 12.4413886551  
X\_ 2 = 15.2069432755  
X\_ 3 = 15.5933277226  
X\_ 4 = 13.7596953376  
X\_ 5 = 3.2051489653  
X\_ 6 = 1.2660494889  
X\_ 7 = 1.1250984790  
X\_ 8 = 1.3594429062  
X\_ 9 = 1.6721160518  
X\_10 = 2.0011373529  
X\_11 = 2.3335707127  
X\_12 = 2.6667162106  
X\_13 = 3.0000103404  
X\_14 = 3.3333354915  
X\_15 = 3.6666671171  
X\_16 = 4.0000000940  
X\_17 = 4.3333333530  
X\_18 = 4.6666666708  
X\_19 = 5.0000000009  
X\_20 = 5.3333333335  
X\_21 = 5.6666666667  
X\_22 = 6.0000000000  
X\_23 = 6.3333333333  
X\_24 = 6.6666666667  
X\_25 = 7.0000000000  
X\_26 = 7.3333333333  
X\_27 = 7.6666666667  
X\_28 = 8.0000000000  
X\_29 = 8.3333333333  
X\_30 = 8.6666666667  
X\_31 = 9.0000000000  
X\_32 = 9.3333333333  
X\_33 = 9.6666666667  
X\_34 = 10.0000000000  
X\_35 = 10.3333333331  
X\_36 = 10.6666666657  
X\_37 = 10.9999999953  
X\_38 = 11.3333333110  
X\_39 = 11.6666665596  
X\_40 = 11.9999994871  
X\_41 = 12.3333308761  
X\_42 = 12.6666548931  
X\_43 = 12.9999435897  
X\_44 = 13.3330630553  
X\_45 = 13.6653716868  
X\_46 = 13.9937953786  
X\_47 = 14.3036052061  
X\_48 = 14.5242306517  
X\_49 = 14.3175480524  
X\_50 = 12.0635096105  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 48 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
 Columns 34 through 50  
 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47  
X\_ 1 = 12.6102742690  
X\_ 2 = 15.0513713449  
X\_ 3 = 13.6465824554  
X\_ 4 = 3.1815409322  
X\_ 5 = 1.2611222055  
X\_ 6 = 1.1240700951  
X\_ 7 = 1.3592282699  
X\_ 8 = 1.6720712546  
X\_ 9 = 2.0011280032  
X\_10 = 2.3335687613  
X\_11 = 2.6667158033  
X\_12 = 3.0000102554  
X\_13 = 3.3333354738  
X\_14 = 3.6666671134  
X\_15 = 4.0000000932  
X\_16 = 4.3333333528  
X\_17 = 4.6666666707  
X\_18 = 5.0000000008  
X\_19 = 5.3333333335  
X\_20 = 5.6666666667  
X\_21 = 6.0000000000  
X\_22 = 6.3333333333  
X\_23 = 6.6666666667  
X\_24 = 7.0000000000  
X\_25 = 7.3333333333  
X\_26 = 7.6666666667  
X\_27 = 8.0000000000  
X\_28 = 8.3333333333  
X\_29 = 8.6666666667  
X\_30 = 9.0000000000  
X\_31 = 9.3333333333  
X\_32 = 9.6666666667  
X\_33 = 10.0000000000  
X\_34 = 10.3333333333  
X\_35 = 10.6666666665  
X\_36 = 10.9999999990  
X\_37 = 11.3333333286  
X\_38 = 11.6666666439  
X\_39 = 11.9999998907  
X\_40 = 12.3333328096  
X\_41 = 12.6666641571  
X\_42 = 12.9999879760  
X\_43 = 13.3332757228  
X\_44 = 13.6663906380  
X\_45 = 13.9986774673  
X\_46 = 14.3269966987  
X\_47 = 14.6363060260  
X\_48 = 14.8545334315  
X\_49 = 14.6363611316  
X\_50 = 12.3272722263  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 49 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31  
 Columns 34 through 50  
 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48  
X\_ 1 = 12.4194538583  
X\_ 2 = 13.0972692915  
X\_ 3 = 3.0668925993  
X\_ 4 = 1.2371937051  
X\_ 5 = 1.1190759263  
X\_ 6 = 1.3581859262  
X\_ 7 = 1.6718537048  
X\_ 8 = 2.0010825979  
X\_ 9 = 2.3335592847  
X\_10 = 2.6667138255  
X\_11 = 3.0000098426  
X\_12 = 3.3333353876  
X\_13 = 3.6666670954  
X\_14 = 4.0000000895  
X\_15 = 4.3333333520  
X\_16 = 4.6666666706  
X\_17 = 5.0000000008  
X\_18 = 5.3333333335  
X\_19 = 5.6666666667  
X\_20 = 6.0000000000  
X\_21 = 6.3333333333  
X\_22 = 6.6666666667  
X\_23 = 7.0000000000  
X\_24 = 7.3333333333  
X\_25 = 7.6666666667  
X\_26 = 8.0000000000  
X\_27 = 8.3333333333  
X\_28 = 8.6666666667  
X\_29 = 9.0000000000  
X\_30 = 9.3333333333  
X\_31 = 9.6666666667  
X\_32 = 10.0000000000  
X\_33 = 10.3333333333  
X\_34 = 10.6666666666  
X\_35 = 10.9999999998  
X\_36 = 11.3333333323  
X\_37 = 11.6666666618  
X\_38 = 11.9999999767  
X\_39 = 12.3333332217  
X\_40 = 12.6666661320  
X\_41 = 12.9999974382  
X\_42 = 13.3333210588  
X\_43 = 13.6666078559  
X\_44 = 13.9997182208  
X\_45 = 14.3319832479  
X\_46 = 14.6601980188  
X\_47 = 14.9690068460  
X\_48 = 15.1848362113  
X\_49 = 14.9551742107  
X\_50 = 12.5910348421  
  
The Solutions of the System:   
b =  
 Columns 1 through 33  
 50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32  
 Columns 34 through 50  
 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49

X\_ 1 = 10.5051783436  
X\_ 2 = 2.5258917181  
X\_ 3 = 1.1242802467  
X\_ 4 = 1.0955095153  
X\_ 5 = 1.3532673299  
X\_ 6 = 1.6708271340  
X\_ 7 = 2.0008683401  
X\_ 8 = 2.3335145665  
X\_ 9 = 2.6667044922  
X\_10 = 3.0000078947  
X\_11 = 3.3333349810  
X\_12 = 3.6666670106  
X\_13 = 4.0000000718  
X\_14 = 4.3333333483  
X\_15 = 4.6666666698  
X\_16 = 5.0000000007  
X\_17 = 5.3333333335  
X\_18 = 5.6666666667  
X\_19 = 6.0000000000  
X\_20 = 6.3333333333  
X\_21 = 6.6666666667  
X\_22 = 7.0000000000  
X\_23 = 7.3333333333  
X\_24 = 7.6666666667  
X\_25 = 8.0000000000  
X\_26 = 8.3333333333  
X\_27 = 8.6666666667  
X\_28 = 9.0000000000  
X\_29 = 9.3333333333  
X\_30 = 9.6666666667  
X\_31 = 10.0000000000  
X\_32 = 10.3333333333  
X\_33 = 10.6666666667  
X\_34 = 11.0000000000  
X\_35 = 11.3333333331  
X\_36 = 11.6666666656  
X\_37 = 11.9999999950  
X\_38 = 12.3333333096  
X\_39 = 12.6666665528  
X\_40 = 12.9999994544  
X\_41 = 13.3333307192  
X\_42 = 13.6666541416  
X\_43 = 13.9999399890  
X\_44 = 14.3330458035  
X\_45 = 14.6652890285  
X\_46 = 14.9933993389  
X\_47 = 15.3017076660  
X\_48 = 15.5151389912  
X\_49 = 15.2739872898  
X\_50 = 12.8547974580