```
% 19ucc023
% Mohit Akhouri
% Experiment 3 - Observation 3 and Observation 4

% This code will utilize the myDft function to calculate N-point DFT
% of any random sequence and compare the results with in-built fft
 function

% ALGORITHM : First we calculate the N-point DFT matrix and multiply
 the
% DFT matrix with input sequence x[n] to obtain N-point DFT

clc;
clear all;
close all;

x_8_point = rand(1,8); % A random 1 row * 8 columns array
x_16_point = rand(1,16); % A random 1 row * 16 columns array
x_32_point = rand(1,32); % A random 1 row * 32 columns array
x_64_point = rand(1,64); % A random 1 row * 64 columns array

% DFT of sequence x_8_point
dft_8_user_defined = myDft(x_8_point,8); % DFT through function myDft
dft_8_inbuilt = fft(x_8_point,8); % DFT through INBUILT function fft

% DFT of sequence x_16_point
dft_16_user_defined = myDft(x_16_point,16); % DFT through function
 myDft
dft_16_inbuilt = fft(x_16_point,16); % DFT through INBUILT function
 fft

% DFT of sequence x_32_point
dft_32_user_defined = myDft(x_32_point,32); % DFT through function
 myDft
dft_32_inbuilt = fft(x_32_point,32); % DFT through INBUILT function
 fft

% DFT of sequence x_64_point
dft_64_user_defined = myDft(x_64_point,64); % DFT through function
 myDft
dft_64_inbuilt = fft(x_64_point,64); % DFT through INBUILT function
 fft

% plotting of various signal x[n] and X(w) for different N-point
figure;
subplot(3,1,1);
stem(x_8_point,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('x[n]->');
title('RANDOM x[n] sequence for 8-point DFT');
grid on;
subplot(3,1,2);
```

```
stem(dft_8_user_defined,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('X[\omega]->');
title('Discrete fourier transform (DFT) of x[n] using USER-DEFINED
 myDft function');
grid on;
subplot(3,1,3);
stem(dft_8_inbuilt,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('X[\omega]->');
title('Discrete fourier transform (DFT) of x[n] using INBUILT fft
 function');
grid on;
sgtitle('19ucc023 - Mohit Akhouri');

figure;
subplot(3,1,1);
stem(x_16_point,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('x[n]->');
title('RANDOM x[n] sequence for 16-point DFT');
grid on;
subplot(3,1,2);
stem(dft_16_user_defined,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('X[\omega]->');
title('Discrete fourier transform (DFT) of x[n] using USER-DEFINED
 myDft function');
grid on;
subplot(3,1,3);
stem(dft_16_inbuilt,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('X[\omega]->');
title('Discrete fourier transform (DFT) of x[n] using INBUILT fft
 function');
grid on;
sgtitle('19ucc023 - Mohit Akhouri');

figure;
subplot(3,1,1);
stem(x_32_point,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('x[n]->');
title('RANDOM x[n] sequence for 32-point DFT');
grid on;
subplot(3,1,2);
stem(dft_32_user_defined,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('X[\omega]->');
title('Discrete fourier transform (DFT) of x[n] using USER-DEFINED
 myDft function');
grid on;
subplot(3,1,3);
stem(dft_32_inbuilt,'Linewidth',1.5);
```

```
xlabel('samples(n)->');
ylabel('X[\omega]->');
title('Discrete fourier transform (DFT) of x[n] using INBUILT fft
 function');
grid on;
sgtitle('19ucc023 - Mohit Akhouri');

figure;
subplot(3,1,1);
stem(x_64_point,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('x[n]->');
title('RANDOM x[n] sequence for 64-point DFT');
grid on;
subplot(3,1,2);
stem(dft_64_user_defined,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('X[\omega]->');
title('Discrete fourier transform (DFT) of x[n] using USER-DEFINED
 myDft function');
grid on;
subplot(3,1,3);
stem(dft_64_inbuilt,'Linewidth',1.5);
xlabel('samples(n)->');
ylabel('X[\omega]->');
title('Discrete fourier transform (DFT) of x[n] using INBUILT fft
 function');
grid on;
sgtitle('19ucc023 - Mohit Akhouri');
```

```
The DFT matrix is given as :
  Columns 1 through 4

   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
 0.0000i
   1.0000 + 0.0000i   0.7071 - 0.7071i   0.0000 - 1.0000i  -0.7071 -
 0.7071i
   1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
 1.0000i
   1.0000 + 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
 0.7071i
   1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
 0.0000i
   1.0000 + 0.0000i  -0.7071 + 0.7071i   0.0000 - 1.0000i   0.7071 +
 0.7071i
   1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
 1.0000i
   1.0000 + 0.0000i   0.7071 + 0.7071i  -0.0000 + 1.0000i  -0.7071 +
 0.7071i

  Columns 5 through 8

   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
 0.0000i
```

```
  -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
   1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
  -1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
   1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
  -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
   1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i  -0.0000 -
1.0000i
  -1.0000 - 0.0000i  -0.7071 - 0.7071i  -0.0000 - 1.0000i   0.7071 -
0.7071i

The DFT matrix is given as :
  Columns 1 through 4

   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
   1.0000 + 0.0000i   0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 -
0.9239i
   1.0000 + 0.0000i   0.7071 - 0.7071i   0.0000 - 1.0000i  -0.7071 -
0.7071i
   1.0000 + 0.0000i   0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 +
0.3827i
   1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
   1.0000 + 0.0000i  -0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 +
0.3827i
   1.0000 + 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
0.7071i
   1.0000 + 0.0000i  -0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 -
0.9239i
   1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
   1.0000 + 0.0000i  -0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 +
0.9239i
   1.0000 + 0.0000i  -0.7071 + 0.7071i   0.0000 - 1.0000i   0.7071 +
0.7071i
   1.0000 + 0.0000i  -0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 -
0.3827i
   1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
   1.0000 + 0.0000i   0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 -
0.3827i
   1.0000 + 0.0000i   0.7071 + 0.7071i  -0.0000 + 1.0000i  -0.7071 +
0.7071i
   1.0000 + 0.0000i   0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 +
0.9239i

  Columns 5 through 8
```

```
  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  0.0000 - 1.0000i  -0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 -
0.3827i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
 -0.0000 + 1.0000i   0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 -
0.9239i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
  0.0000 - 1.0000i  -0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 -
0.9239i
 -1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
 -0.0000 + 1.0000i   0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 -
0.3827i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
  0.0000 - 1.0000i   0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 +
0.3827i
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
 -0.0000 + 1.0000i  -0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 +
0.9239i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i  -0.0000 -
1.0000i
 -0.0000 - 1.0000i   0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 +
0.9239i
 -1.0000 - 0.0000i  -0.7071 - 0.7071i  -0.0000 - 1.0000i   0.7071 -
0.7071i
 -0.0000 + 1.0000i  -0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 +
0.3827i

 Columns 9 through 12

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -1.0000 - 0.0000i  -0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 +
0.9239i
  1.0000 + 0.0000i   0.7071 - 0.7071i   0.0000 - 1.0000i  -0.7071 -
0.7071i
 -1.0000 - 0.0000i  -0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 -
0.3827i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
 -1.0000 - 0.0000i   0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 -
0.3827i
  1.0000 + 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
0.7071i
 -1.0000 - 0.0000i   0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 +
0.9239i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
```

```
 -1.0000 - 0.0000i   0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 -
0.9239i
  1.0000 + 0.0000i  -0.7071 + 0.7071i  -0.0000 - 1.0000i   0.7071 +
0.7071i
 -1.0000 - 0.0000i   0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 +
0.3827i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
 -1.0000 + 0.0000i  -0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 +
0.3827i
  1.0000 + 0.0000i   0.7071 + 0.7071i  -0.0000 + 1.0000i  -0.7071 +
0.7071i
 -1.0000 - 0.0000i  -0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 -
0.9239i

 Columns 13 through 16

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -0.0000 + 1.0000i   0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 +
0.3827i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
  0.0000 - 1.0000i  -0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 +
0.9239i
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
 -0.0000 + 1.0000i   0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 +
0.9239i
 -1.0000 - 0.0000i   0.7071 + 0.7071i  -0.0000 - 1.0000i  -0.7071 +
0.7071i
 -0.0000 - 1.0000i  -0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 +
0.3827i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
 -0.0000 + 1.0000i  -0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 -
0.3827i
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
  0.0000 - 1.0000i   0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 -
0.9239i
  1.0000 + 0.0000i   0.0000 + 1.0000i  -1.0000 + 0.0000i   0.0000 -
1.0000i
 -0.0000 + 1.0000i  -0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 -
0.9239i
 -1.0000 + 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
  0.0000 - 1.0000i   0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 -
0.3827i

The DFT matrix is given as :
  Columns 1 through 4
```

```
  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  1.0000 + 0.0000i   0.9808 - 0.1951i   0.9239 - 0.3827i   0.8315 -
0.5556i
  1.0000 + 0.0000i   0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 -
0.9239i
  1.0000 + 0.0000i   0.8315 - 0.5556i   0.3827 - 0.9239i  -0.1951 -
0.9808i
  1.0000 + 0.0000i   0.7071 - 0.7071i   0.0000 - 1.0000i  -0.7071 -
0.7071i
  1.0000 + 0.0000i   0.5556 - 0.8315i  -0.3827 - 0.9239i  -0.9808 -
0.1951i
  1.0000 + 0.0000i   0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 +
0.3827i
  1.0000 + 0.0000i   0.1951 - 0.9808i  -0.9239 - 0.3827i  -0.5556 +
0.8315i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
  1.0000 + 0.0000i  -0.1951 - 0.9808i  -0.9239 + 0.3827i   0.5556 +
0.8315i
  1.0000 + 0.0000i  -0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 +
0.3827i
  1.0000 + 0.0000i  -0.5556 - 0.8315i  -0.3827 + 0.9239i   0.9808 -
0.1951i
  1.0000 + 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
0.7071i
  1.0000 + 0.0000i  -0.8315 - 0.5556i   0.3827 + 0.9239i   0.1951 -
0.9808i
  1.0000 + 0.0000i  -0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 -
0.9239i
  1.0000 + 0.0000i  -0.9808 - 0.1951i   0.9239 + 0.3827i  -0.8315 -
0.5556i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
  1.0000 + 0.0000i  -0.9808 + 0.1951i   0.9239 - 0.3827i  -0.8315 +
0.5556i
  1.0000 + 0.0000i  -0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 +
0.9239i
  1.0000 + 0.0000i  -0.8315 + 0.5556i   0.3827 - 0.9239i   0.1951 +
0.9808i
  1.0000 + 0.0000i  -0.7071 + 0.7071i   0.0000 - 1.0000i   0.7071 +
0.7071i
  1.0000 + 0.0000i  -0.5556 + 0.8315i  -0.3827 - 0.9239i   0.9808 +
0.1951i
  1.0000 + 0.0000i  -0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 -
0.3827i
  1.0000 + 0.0000i  -0.1951 + 0.9808i  -0.9239 - 0.3827i   0.5556 -
0.8315i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
  1.0000 + 0.0000i   0.1951 + 0.9808i  -0.9239 + 0.3827i  -0.5556 -
0.8315i
  1.0000 + 0.0000i   0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 -
0.3827i
```

```
  1.0000 + 0.0000i   0.5556 + 0.8315i  -0.3827 + 0.9239i  -0.9808 +
0.1951i
  1.0000 + 0.0000i   0.7071 + 0.7071i  -0.0000 + 1.0000i  -0.7071 +
0.7071i
  1.0000 + 0.0000i   0.8315 + 0.5556i   0.3827 + 0.9239i  -0.1951 +
0.9808i
  1.0000 + 0.0000i   0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 +
0.9239i
  1.0000 + 0.0000i   0.9808 + 0.1951i   0.9239 + 0.3827i   0.8315 +
0.5556i

 Columns 5 through 8

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  0.7071 - 0.7071i   0.5556 - 0.8315i   0.3827 - 0.9239i   0.1951 -
0.9808i
  0.0000 - 1.0000i  -0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 -
0.3827i
 -0.7071 - 0.7071i  -0.9808 - 0.1951i  -0.9239 + 0.3827i  -0.5556 +
0.8315i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
 -0.7071 + 0.7071i   0.1951 + 0.9808i   0.9239 + 0.3827i   0.8315 -
0.5556i
 -0.0000 + 1.0000i   0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 -
0.9239i
  0.7071 + 0.7071i   0.8315 - 0.5556i  -0.3827 - 0.9239i  -0.9808 +
0.1951i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
  0.7071 - 0.7071i  -0.8315 - 0.5556i  -0.3827 + 0.9239i   0.9808 +
0.1951i
  0.0000 - 1.0000i  -0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 -
0.9239i
 -0.7071 - 0.7071i  -0.1951 + 0.9808i   0.9239 - 0.3827i  -0.8315 -
0.5556i
 -1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
 -0.7071 + 0.7071i   0.9808 - 0.1951i  -0.9239 - 0.3827i   0.5556 +
0.8315i
 -0.0000 + 1.0000i   0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 -
0.3827i
  0.7071 + 0.7071i  -0.5556 - 0.8315i   0.3827 + 0.9239i  -0.1951 -
0.9808i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
  0.7071 - 0.7071i  -0.5556 + 0.8315i   0.3827 - 0.9239i  -0.1951 +
0.9808i
  0.0000 - 1.0000i   0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 +
0.3827i
 -0.7071 - 0.7071i   0.9808 + 0.1951i  -0.9239 + 0.3827i   0.5556 -
0.8315i
```

```
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
 -0.7071 + 0.7071i  -0.1951 - 0.9808i   0.9239 + 0.3827i  -0.8315 +
0.5556i
 -0.0000 + 1.0000i  -0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 +
0.9239i
  0.7071 + 0.7071i  -0.8315 + 0.5556i  -0.3827 - 0.9239i   0.9808 -
0.1951i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i  -0.0000 -
1.0000i
  0.7071 - 0.7071i   0.8315 + 0.5556i  -0.3827 + 0.9239i  -0.9808 -
0.1951i
 -0.0000 - 1.0000i   0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 +
0.9239i
 -0.7071 - 0.7071i   0.1951 - 0.9808i   0.9239 - 0.3827i   0.8315 +
0.5556i
 -1.0000 - 0.0000i  -0.7071 - 0.7071i  -0.0000 - 1.0000i   0.7071 -
0.7071i
 -0.7071 + 0.7071i  -0.9808 + 0.1951i  -0.9239 - 0.3827i  -0.5556 -
0.8315i
 -0.0000 + 1.0000i  -0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 +
0.3827i
  0.7071 + 0.7071i   0.5556 + 0.8315i   0.3827 + 0.9239i   0.1951 +
0.9808i

 Columns 9 through 12

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  0.0000 - 1.0000i  -0.1951 - 0.9808i  -0.3827 - 0.9239i  -0.5556 -
0.8315i
 -1.0000 - 0.0000i  -0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 +
0.9239i
 -0.0000 + 1.0000i   0.5556 + 0.8315i   0.9239 + 0.3827i   0.9808 -
0.1951i
  1.0000 + 0.0000i   0.7071 - 0.7071i   0.0000 - 1.0000i  -0.7071 -
0.7071i
  0.0000 - 1.0000i  -0.8315 - 0.5556i  -0.9239 + 0.3827i  -0.1951 +
0.9808i
 -1.0000 - 0.0000i  -0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 -
0.3827i
 -0.0000 + 1.0000i   0.9808 + 0.1951i   0.3827 - 0.9239i  -0.8315 -
0.5556i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
  0.0000 - 1.0000i  -0.9808 + 0.1951i   0.3827 + 0.9239i   0.8315 -
0.5556i
 -1.0000 - 0.0000i   0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 -
0.3827i
 -0.0000 + 1.0000i   0.8315 - 0.5556i  -0.9239 - 0.3827i   0.1951 +
0.9808i
  1.0000 + 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
0.7071i
```

```
 -0.0000 - 1.0000i  -0.5556 + 0.8315i   0.9239 - 0.3827i  -0.9808 -
0.1951i
 -1.0000 - 0.0000i   0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 +
0.9239i
 -0.0000 + 1.0000i   0.1951 - 0.9808i  -0.3827 + 0.9239i   0.5556 -
0.8315i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
 -0.0000 - 1.0000i   0.1951 + 0.9808i  -0.3827 - 0.9239i   0.5556 +
0.8315i
 -1.0000 - 0.0000i   0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 -
0.9239i
 -0.0000 + 1.0000i  -0.5556 - 0.8315i   0.9239 + 0.3827i  -0.9808 +
0.1951i
  1.0000 + 0.0000i  -0.7071 + 0.7071i  -0.0000 - 1.0000i   0.7071 +
0.7071i
 -0.0000 - 1.0000i   0.8315 + 0.5556i  -0.9239 + 0.3827i   0.1951 -
0.9808i
 -1.0000 - 0.0000i   0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 +
0.3827i
 -0.0000 + 1.0000i  -0.9808 - 0.1951i   0.3827 - 0.9239i   0.8315 +
0.5556i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
 -0.0000 - 1.0000i   0.9808 - 0.1951i   0.3827 + 0.9239i  -0.8315 +
0.5556i
 -1.0000 + 0.0000i  -0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 +
0.3827i
 -0.0000 + 1.0000i  -0.8315 + 0.5556i  -0.9239 - 0.3827i  -0.1951 -
0.9808i
  1.0000 + 0.0000i   0.7071 + 0.7071i  -0.0000 + 1.0000i  -0.7071 +
0.7071i
 -0.0000 - 1.0000i   0.5556 - 0.8315i   0.9239 - 0.3827i   0.9808 +
0.1951i
 -1.0000 - 0.0000i  -0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 -
0.9239i
 -0.0000 + 1.0000i  -0.1951 + 0.9808i  -0.3827 + 0.9239i  -0.5556 +
0.8315i

 Columns 13 through 16

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -0.7071 - 0.7071i  -0.8315 - 0.5556i  -0.9239 - 0.3827i  -0.9808 -
0.1951i
 -0.0000 + 1.0000i   0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 +
0.3827i
  0.7071 - 0.7071i   0.1951 - 0.9808i  -0.3827 - 0.9239i  -0.8315 -
0.5556i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
  0.7071 + 0.7071i   0.9808 - 0.1951i   0.3827 - 0.9239i  -0.5556 -
0.8315i
```

```
  0.0000 - 1.0000i  -0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 +
0.9239i
 -0.7071 + 0.7071i   0.5556 + 0.8315i   0.9239 - 0.3827i  -0.1951 -
0.9808i
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
 -0.7071 - 0.7071i  -0.5556 + 0.8315i   0.9239 + 0.3827i   0.1951 -
0.9808i
 -0.0000 + 1.0000i   0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 +
0.9239i
  0.7071 - 0.7071i  -0.9808 - 0.1951i   0.3827 + 0.9239i   0.5556 -
0.8315i
 -1.0000 - 0.0000i   0.7071 + 0.7071i  -0.0000 - 1.0000i  -0.7071 +
0.7071i
  0.7071 + 0.7071i  -0.1951 - 0.9808i  -0.3827 + 0.9239i   0.8315 -
0.5556i
 -0.0000 - 1.0000i  -0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 +
0.3827i
 -0.7071 + 0.7071i   0.8315 - 0.5556i  -0.9239 + 0.3827i   0.9808 -
0.1951i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
 -0.7071 - 0.7071i   0.8315 + 0.5556i  -0.9239 - 0.3827i   0.9808 +
0.1951i
 -0.0000 + 1.0000i  -0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 -
0.3827i
  0.7071 - 0.7071i  -0.1951 + 0.9808i  -0.3827 - 0.9239i   0.8315 +
0.5556i
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
  0.7071 + 0.7071i  -0.9808 + 0.1951i   0.3827 - 0.9239i   0.5556 +
0.8315i
  0.0000 - 1.0000i   0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 -
0.9239i
 -0.7071 + 0.7071i  -0.5556 - 0.8315i   0.9239 - 0.3827i   0.1951 +
0.9808i
  1.0000 + 0.0000i   0.0000 + 1.0000i  -1.0000 + 0.0000i   0.0000 -
1.0000i
 -0.7071 - 0.7071i   0.5556 - 0.8315i   0.9239 + 0.3827i  -0.1951 +
0.9808i
 -0.0000 + 1.0000i  -0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 -
0.9239i
  0.7071 - 0.7071i   0.9808 + 0.1951i   0.3827 + 0.9239i  -0.5556 +
0.8315i
 -1.0000 + 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
  0.7071 + 0.7071i   0.1951 + 0.9808i  -0.3827 + 0.9239i  -0.8315 +
0.5556i
  0.0000 - 1.0000i   0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 -
0.3827i
 -0.7071 + 0.7071i  -0.8315 + 0.5556i  -0.9239 + 0.3827i  -0.9808 +
0.1951i

 Columns 17 through 20
```

```
  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -1.0000 - 0.0000i  -0.9808 + 0.1951i  -0.9239 + 0.3827i  -0.8315 +
0.5556i
  1.0000 + 0.0000i   0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 -
0.9239i
 -1.0000 - 0.0000i  -0.8315 + 0.5556i  -0.3827 + 0.9239i   0.1951 +
0.9808i
  1.0000 + 0.0000i   0.7071 - 0.7071i   0.0000 - 1.0000i  -0.7071 -
0.7071i
 -1.0000 - 0.0000i  -0.5556 + 0.8315i   0.3827 + 0.9239i   0.9808 +
0.1951i
  1.0000 + 0.0000i   0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 +
0.3827i
 -1.0000 - 0.0000i  -0.1951 + 0.9808i   0.9239 + 0.3827i   0.5556 -
0.8315i
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
 -1.0000 - 0.0000i   0.1951 + 0.9808i   0.9239 - 0.3827i  -0.5556 -
0.8315i
  1.0000 + 0.0000i  -0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 +
0.3827i
 -1.0000 - 0.0000i   0.5556 + 0.8315i   0.3827 - 0.9239i  -0.9808 +
0.1951i
  1.0000 + 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
0.7071i
 -1.0000 + 0.0000i   0.8315 + 0.5556i  -0.3827 - 0.9239i  -0.1951 +
0.9808i
  1.0000 + 0.0000i  -0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 -
0.9239i
 -1.0000 - 0.0000i   0.9808 + 0.1951i  -0.9239 - 0.3827i   0.8315 +
0.5556i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
 -1.0000 + 0.0000i   0.9808 - 0.1951i  -0.9239 + 0.3827i   0.8315 -
0.5556i
  1.0000 + 0.0000i  -0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 +
0.9239i
 -1.0000 - 0.0000i   0.8315 - 0.5556i  -0.3827 + 0.9239i  -0.1951 -
0.9808i
  1.0000 + 0.0000i  -0.7071 + 0.7071i   0.0000 - 1.0000i   0.7071 +
0.7071i
 -1.0000 + 0.0000i   0.5556 - 0.8315i   0.3827 + 0.9239i  -0.9808 -
0.1951i
  1.0000 + 0.0000i  -0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 -
0.3827i
 -1.0000 - 0.0000i   0.1951 - 0.9808i   0.9239 + 0.3827i  -0.5556 +
0.8315i
  1.0000 + 0.0000i   0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
 -1.0000 + 0.0000i  -0.1951 - 0.9808i   0.9239 - 0.3827i   0.5556 +
0.8315i
```

```
  1.0000 - 0.0000i   0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 -
0.3827i
 -1.0000 - 0.0000i  -0.5556 - 0.8315i   0.3827 - 0.9239i   0.9808 -
0.1951i
  1.0000 + 0.0000i   0.7071 + 0.7071i   0.0000 + 1.0000i  -0.7071 +
0.7071i
 -1.0000 + 0.0000i  -0.8315 - 0.5556i  -0.3827 - 0.9239i   0.1951 -
0.9808i
  1.0000 + 0.0000i   0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 +
0.9239i
 -1.0000 - 0.0000i  -0.9808 - 0.1951i  -0.9239 - 0.3827i  -0.8315 -
0.5556i

 Columns 21 through 24

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -0.7071 + 0.7071i  -0.5556 + 0.8315i  -0.3827 + 0.9239i  -0.1951 +
0.9808i
  0.0000 - 1.0000i  -0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 -
0.3827i
  0.7071 + 0.7071i   0.9808 + 0.1951i   0.9239 - 0.3827i   0.5556 -
0.8315i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
  0.7071 - 0.7071i  -0.1951 - 0.9808i  -0.9239 - 0.3827i  -0.8315 +
0.5556i
 -0.0000 + 1.0000i   0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 -
0.9239i
 -0.7071 - 0.7071i  -0.8315 + 0.5556i   0.3827 + 0.9239i   0.9808 -
0.1951i
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
 -0.7071 + 0.7071i   0.8315 + 0.5556i   0.3827 - 0.9239i  -0.9808 -
0.1951i
 -0.0000 - 1.0000i  -0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 -
0.9239i
  0.7071 + 0.7071i   0.1951 - 0.9808i  -0.9239 + 0.3827i   0.8315 +
0.5556i
 -1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
  0.7071 - 0.7071i  -0.9808 + 0.1951i   0.9239 + 0.3827i  -0.5556 -
0.8315i
 -0.0000 + 1.0000i   0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 -
0.3827i
 -0.7071 - 0.7071i   0.5556 + 0.8315i  -0.3827 - 0.9239i   0.1951 +
0.9808i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
 -0.7071 + 0.7071i   0.5556 - 0.8315i  -0.3827 + 0.9239i   0.1951 -
0.9808i
  0.0000 - 1.0000i   0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 +
0.3827i
```

```
  0.7071 + 0.7071i  -0.9808 - 0.1951i   0.9239 - 0.3827i  -0.5556 +
0.8315i
 -1.0000 + 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
  0.7071 - 0.7071i   0.1951 + 0.9808i  -0.9239 - 0.3827i   0.8315 -
0.5556i
  0.0000 + 1.0000i  -0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 +
0.9239i
 -0.7071 - 0.7071i   0.8315 - 0.5556i   0.3827 + 0.9239i  -0.9808 +
0.1951i
  1.0000 + 0.0000i   0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
 -0.7071 + 0.7071i  -0.8315 - 0.5556i   0.3827 - 0.9239i   0.9808 +
0.1951i
  0.0000 - 1.0000i   0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 +
0.9239i
  0.7071 + 0.7071i  -0.1951 + 0.9808i  -0.9239 + 0.3827i  -0.8315 -
0.5556i
 -1.0000 - 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
  0.7071 - 0.7071i   0.9808 - 0.1951i   0.9239 + 0.3827i   0.5556 +
0.8315i
 -0.0000 + 1.0000i  -0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 +
0.3827i
 -0.7071 - 0.7071i  -0.5556 - 0.8315i  -0.3827 - 0.9239i  -0.1951 -
0.9808i

 Columns 25 through 28

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -0.0000 + 1.0000i   0.1951 + 0.9808i   0.3827 + 0.9239i   0.5556 +
0.8315i
 -1.0000 - 0.0000i  -0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 +
0.9239i
  0.0000 - 1.0000i  -0.5556 - 0.8315i  -0.9239 - 0.3827i  -0.9808 +
0.1951i
  1.0000 + 0.0000i   0.7071 - 0.7071i  -0.0000 - 1.0000i  -0.7071 -
0.7071i
 -0.0000 + 1.0000i   0.8315 + 0.5556i   0.9239 - 0.3827i   0.1951 -
0.9808i
 -1.0000 - 0.0000i  -0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 -
0.3827i
 -0.0000 - 1.0000i  -0.9808 - 0.1951i  -0.3827 + 0.9239i   0.8315 +
0.5556i
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 + 0.0000i  -0.0000 +
1.0000i
 -0.0000 + 1.0000i   0.9808 - 0.1951i  -0.3827 - 0.9239i  -0.8315 +
0.5556i
 -1.0000 - 0.0000i   0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 -
0.3827i
  0.0000 - 1.0000i  -0.8315 + 0.5556i   0.9239 + 0.3827i  -0.1951 -
0.9808i
```

```
  1.0000 + 0.0000i  -0.7071 - 0.7071i   0.0000 + 1.0000i   0.7071 -
0.7071i
 -0.0000 + 1.0000i   0.5556 - 0.8315i  -0.9239 + 0.3827i   0.9808 +
0.1951i
 -1.0000 + 0.0000i   0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 +
0.9239i
  0.0000 - 1.0000i  -0.1951 + 0.9808i   0.3827 - 0.9239i  -0.5556 +
0.8315i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 - 0.0000i  -1.0000 -
0.0000i
 -0.0000 + 1.0000i  -0.1951 - 0.9808i   0.3827 + 0.9239i  -0.5556 -
0.8315i
 -1.0000 - 0.0000i   0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 -
0.9239i
  0.0000 - 1.0000i   0.5556 + 0.8315i  -0.9239 - 0.3827i   0.9808 -
0.1951i
  1.0000 + 0.0000i  -0.7071 + 0.7071i  -0.0000 - 1.0000i   0.7071 +
0.7071i
  0.0000 + 1.0000i  -0.8315 - 0.5556i   0.9239 - 0.3827i  -0.1951 +
0.9808i
 -1.0000 - 0.0000i   0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 +
0.3827i
  0.0000 - 1.0000i   0.9808 + 0.1951i  -0.3827 + 0.9239i  -0.8315 -
0.5556i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 + 0.0000i   0.0000 -
1.0000i
 -0.0000 + 1.0000i  -0.9808 + 0.1951i  -0.3827 - 0.9239i   0.8315 -
0.5556i
 -1.0000 - 0.0000i  -0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 +
0.3827i
  0.0000 - 1.0000i   0.8315 - 0.5556i   0.9239 + 0.3827i   0.1951 +
0.9808i
  1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 + 1.0000i  -0.7071 +
0.7071i
 -0.0000 + 1.0000i  -0.5556 + 0.8315i  -0.9239 + 0.3827i  -0.9808 -
0.1951i
 -1.0000 - 0.0000i  -0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 -
0.9239i
  0.0000 - 1.0000i   0.1951 - 0.9808i   0.3827 - 0.9239i   0.5556 -
0.8315i

 Columns 29 through 32

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  0.7071 + 0.7071i   0.8315 + 0.5556i   0.9239 + 0.3827i   0.9808 +
0.1951i
 -0.0000 + 1.0000i   0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 +
0.3827i
 -0.7071 + 0.7071i  -0.1951 + 0.9808i   0.3827 + 0.9239i   0.8315 +
0.5556i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
```

```
 -0.7071 - 0.7071i  -0.9808 + 0.1951i  -0.3827 + 0.9239i   0.5556 +
0.8315i
 -0.0000 - 1.0000i  -0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 +
0.9239i
  0.7071 - 0.7071i  -0.5556 - 0.8315i  -0.9239 + 0.3827i   0.1951 +
0.9808i
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
  0.7071 + 0.7071i   0.5556 - 0.8315i  -0.9239 - 0.3827i  -0.1951 +
0.9808i
 -0.0000 + 1.0000i   0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 +
0.9239i
 -0.7071 + 0.7071i   0.9808 + 0.1951i  -0.3827 - 0.9239i  -0.5556 +
0.8315i
 -1.0000 + 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
 -0.7071 - 0.7071i   0.1951 + 0.9808i   0.3827 - 0.9239i  -0.8315 +
0.5556i
  0.0000 - 1.0000i  -0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 +
0.3827i
  0.7071 - 0.7071i  -0.8315 + 0.5556i   0.9239 - 0.3827i  -0.9808 +
0.1951i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
  0.7071 + 0.7071i  -0.8315 - 0.5556i   0.9239 + 0.3827i  -0.9808 -
0.1951i
  0.0000 + 1.0000i  -0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 -
0.3827i
 -0.7071 + 0.7071i   0.1951 - 0.9808i   0.3827 + 0.9239i  -0.8315 -
0.5556i
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
 -0.7071 - 0.7071i   0.9808 - 0.1951i  -0.3827 + 0.9239i  -0.5556 -
0.8315i
  0.0000 - 1.0000i   0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 -
0.9239i
  0.7071 - 0.7071i   0.5556 + 0.8315i  -0.9239 + 0.3827i  -0.1951 -
0.9808i
  1.0000 - 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
  0.7071 + 0.7071i  -0.5556 + 0.8315i  -0.9239 - 0.3827i   0.1951 -
0.9808i
 -0.0000 + 1.0000i  -0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 -
0.9239i
 -0.7071 + 0.7071i  -0.9808 - 0.1951i  -0.3827 - 0.9239i   0.5556 -
0.8315i
 -1.0000 - 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
 -0.7071 - 0.7071i  -0.1951 - 0.9808i   0.3827 - 0.9239i   0.8315 -
0.5556i
 -0.0000 - 1.0000i   0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 -
0.3827i
  0.7071 - 0.7071i   0.8315 - 0.5556i   0.9239 - 0.3827i   0.9808 -
0.1951i
```

```
The DFT matrix is given as :
  Columns 1 through 4

   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
   1.0000 + 0.0000i   0.9952 - 0.0980i   0.9808 - 0.1951i   0.9569 -
0.2903i
   1.0000 + 0.0000i   0.9808 - 0.1951i   0.9239 - 0.3827i   0.8315 -
0.5556i
   1.0000 + 0.0000i   0.9569 - 0.2903i   0.8315 - 0.5556i   0.6344 -
0.7730i
   1.0000 + 0.0000i   0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 -
0.9239i
   1.0000 + 0.0000i   0.8819 - 0.4714i   0.5556 - 0.8315i   0.0980 -
0.9952i
   1.0000 + 0.0000i   0.8315 - 0.5556i   0.3827 - 0.9239i  -0.1951 -
0.9808i
   1.0000 + 0.0000i   0.7730 - 0.6344i   0.1951 - 0.9808i  -0.4714 -
0.8819i
   1.0000 + 0.0000i   0.7071 - 0.7071i   0.0000 - 1.0000i  -0.7071 -
0.7071i
   1.0000 + 0.0000i   0.6344 - 0.7730i  -0.1951 - 0.9808i  -0.8819 -
0.4714i
   1.0000 + 0.0000i   0.5556 - 0.8315i  -0.3827 - 0.9239i  -0.9808 -
0.1951i
   1.0000 + 0.0000i   0.4714 - 0.8819i  -0.5556 - 0.8315i  -0.9952 +
0.0980i
   1.0000 + 0.0000i   0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 +
0.3827i
   1.0000 + 0.0000i   0.2903 - 0.9569i  -0.8315 - 0.5556i  -0.7730 +
0.6344i
   1.0000 + 0.0000i   0.1951 - 0.9808i  -0.9239 - 0.3827i  -0.5556 +
0.8315i
   1.0000 + 0.0000i   0.0980 - 0.9952i  -0.9808 - 0.1951i  -0.2903 +
0.9569i
   1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
   1.0000 + 0.0000i  -0.0980 - 0.9952i  -0.9808 + 0.1951i   0.2903 +
0.9569i
   1.0000 + 0.0000i  -0.1951 - 0.9808i  -0.9239 + 0.3827i   0.5556 +
0.8315i
   1.0000 + 0.0000i  -0.2903 - 0.9569i  -0.8315 + 0.5556i   0.7730 +
0.6344i
   1.0000 + 0.0000i  -0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 +
0.3827i
   1.0000 + 0.0000i  -0.4714 - 0.8819i  -0.5556 + 0.8315i   0.9952 +
0.0980i
   1.0000 + 0.0000i  -0.5556 - 0.8315i  -0.3827 + 0.9239i   0.9808 -
0.1951i
   1.0000 + 0.0000i  -0.6344 - 0.7730i  -0.1951 + 0.9808i   0.8819 -
0.4714i
   1.0000 + 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
0.7071i
```

```
  1.0000 + 0.0000i  -0.7730 - 0.6344i   0.1951 + 0.9808i   0.4714 -
0.8819i
  1.0000 + 0.0000i  -0.8315 - 0.5556i   0.3827 + 0.9239i   0.1951 -
0.9808i
  1.0000 + 0.0000i  -0.8819 - 0.4714i   0.5556 + 0.8315i  -0.0980 -
0.9952i
  1.0000 + 0.0000i  -0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 -
0.9239i
  1.0000 + 0.0000i  -0.9569 - 0.2903i   0.8315 + 0.5556i  -0.6344 -
0.7730i
  1.0000 + 0.0000i  -0.9808 - 0.1951i   0.9239 + 0.3827i  -0.8315 -
0.5556i
  1.0000 + 0.0000i  -0.9952 - 0.0980i   0.9808 + 0.1951i  -0.9569 -
0.2903i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
  1.0000 + 0.0000i  -0.9952 + 0.0980i   0.9808 - 0.1951i  -0.9569 +
0.2903i
  1.0000 + 0.0000i  -0.9808 + 0.1951i   0.9239 - 0.3827i  -0.8315 +
0.5556i
  1.0000 + 0.0000i  -0.9569 + 0.2903i   0.8315 - 0.5556i  -0.6344 +
0.7730i
  1.0000 + 0.0000i  -0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 +
0.9239i
  1.0000 + 0.0000i  -0.8819 + 0.4714i   0.5556 - 0.8315i  -0.0980 +
0.9952i
  1.0000 + 0.0000i  -0.8315 + 0.5556i   0.3827 - 0.9239i   0.1951 +
0.9808i
  1.0000 + 0.0000i  -0.7730 + 0.6344i   0.1951 - 0.9808i   0.4714 +
0.8819i
  1.0000 + 0.0000i  -0.7071 + 0.7071i   0.0000 - 1.0000i   0.7071 +
0.7071i
  1.0000 + 0.0000i  -0.6344 + 0.7730i  -0.1951 - 0.9808i   0.8819 +
0.4714i
  1.0000 + 0.0000i  -0.5556 + 0.8315i  -0.3827 - 0.9239i   0.9808 +
0.1951i
  1.0000 + 0.0000i  -0.4714 + 0.8819i  -0.5556 - 0.8315i   0.9952 -
0.0980i
  1.0000 + 0.0000i  -0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 -
0.3827i
  1.0000 + 0.0000i  -0.2903 + 0.9569i  -0.8315 - 0.5556i   0.7730 -
0.6344i
  1.0000 + 0.0000i  -0.1951 + 0.9808i  -0.9239 - 0.3827i   0.5556 -
0.8315i
  1.0000 + 0.0000i  -0.0980 + 0.9952i  -0.9808 - 0.1951i   0.2903 -
0.9569i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
  1.0000 + 0.0000i   0.0980 + 0.9952i  -0.9808 + 0.1951i  -0.2903 -
0.9569i
  1.0000 + 0.0000i   0.1951 + 0.9808i  -0.9239 + 0.3827i  -0.5556 -
0.8315i
  1.0000 + 0.0000i   0.2903 + 0.9569i  -0.8315 + 0.5556i  -0.7730 -
0.6344i
```

```
  1.0000 + 0.0000i   0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 -
0.3827i
  1.0000 + 0.0000i   0.4714 + 0.8819i  -0.5556 + 0.8315i  -0.9952 -
0.0980i
  1.0000 + 0.0000i   0.5556 + 0.8315i  -0.3827 + 0.9239i  -0.9808 +
0.1951i
  1.0000 + 0.0000i   0.6344 + 0.7730i  -0.1951 + 0.9808i  -0.8819 +
0.4714i
  1.0000 + 0.0000i   0.7071 + 0.7071i  -0.0000 + 1.0000i  -0.7071 +
0.7071i
  1.0000 + 0.0000i   0.7730 + 0.6344i   0.1951 + 0.9808i  -0.4714 +
0.8819i
  1.0000 + 0.0000i   0.8315 + 0.5556i   0.3827 + 0.9239i  -0.1951 +
0.9808i
  1.0000 + 0.0000i   0.8819 + 0.4714i   0.5556 + 0.8315i   0.0980 +
0.9952i
  1.0000 + 0.0000i   0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 +
0.9239i
  1.0000 + 0.0000i   0.9569 + 0.2903i   0.8315 + 0.5556i   0.6344 +
0.7730i
  1.0000 + 0.0000i   0.9808 + 0.1951i   0.9239 + 0.3827i   0.8315 +
0.5556i
  1.0000 + 0.0000i   0.9952 + 0.0980i   0.9808 + 0.1951i   0.9569 +
0.2903i

 Columns 5 through 8

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  0.9239 - 0.3827i   0.8819 - 0.4714i   0.8315 - 0.5556i   0.7730 -
0.6344i
  0.7071 - 0.7071i   0.5556 - 0.8315i   0.3827 - 0.9239i   0.1951 -
0.9808i
  0.3827 - 0.9239i   0.0980 - 0.9952i  -0.1951 - 0.9808i  -0.4714 -
0.8819i
  0.0000 - 1.0000i  -0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 -
0.3827i
 -0.3827 - 0.9239i  -0.7730 - 0.6344i  -0.9808 - 0.1951i  -0.9569 +
0.2903i
 -0.7071 - 0.7071i  -0.9808 - 0.1951i  -0.9239 + 0.3827i  -0.5556 +
0.8315i
 -0.9239 - 0.3827i  -0.9569 + 0.2903i  -0.5556 + 0.8315i   0.0980 +
0.9952i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
 -0.9239 + 0.3827i  -0.2903 + 0.9569i   0.5556 + 0.8315i   0.9952 +
0.0980i
 -0.7071 + 0.7071i   0.1951 + 0.9808i   0.9239 + 0.3827i   0.8315 -
0.5556i
 -0.3827 + 0.9239i   0.6344 + 0.7730i   0.9808 - 0.1951i   0.2903 -
0.9569i
 -0.0000 + 1.0000i   0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 -
0.9239i
```

```
  0.3827 + 0.9239i   0.9952 - 0.0980i   0.1951 - 0.9808i  -0.8819 -
0.4714i
  0.7071 + 0.7071i   0.8315 - 0.5556i  -0.3827 - 0.9239i  -0.9808 +
0.1951i
  0.9239 + 0.3827i   0.4714 - 0.8819i  -0.8315 - 0.5556i  -0.6344 +
0.7730i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
  0.9239 - 0.3827i  -0.4714 - 0.8819i  -0.8315 + 0.5556i   0.6344 +
0.7730i
  0.7071 - 0.7071i  -0.8315 - 0.5556i  -0.3827 + 0.9239i   0.9808 +
0.1951i
  0.3827 - 0.9239i  -0.9952 - 0.0980i   0.1951 + 0.9808i   0.8819 -
0.4714i
  0.0000 - 1.0000i  -0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 -
0.9239i
 -0.3827 - 0.9239i  -0.6344 + 0.7730i   0.9808 + 0.1951i  -0.2903 -
0.9569i
 -0.7071 - 0.7071i  -0.1951 + 0.9808i   0.9239 - 0.3827i  -0.8315 -
0.5556i
 -0.9239 - 0.3827i   0.2903 + 0.9569i   0.5556 - 0.8315i  -0.9952 +
0.0980i
 -1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
 -0.9239 + 0.3827i   0.9569 + 0.2903i  -0.5556 - 0.8315i  -0.0980 +
0.9952i
 -0.7071 + 0.7071i   0.9808 - 0.1951i  -0.9239 - 0.3827i   0.5556 +
0.8315i
 -0.3827 + 0.9239i   0.7730 - 0.6344i  -0.9808 + 0.1951i   0.9569 +
0.2903i
 -0.0000 + 1.0000i   0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 -
0.3827i
  0.3827 + 0.9239i  -0.0980 - 0.9952i  -0.1951 + 0.9808i   0.4714 -
0.8819i
  0.7071 + 0.7071i  -0.5556 - 0.8315i   0.3827 + 0.9239i  -0.1951 -
0.9808i
  0.9239 + 0.3827i  -0.8819 - 0.4714i   0.8315 + 0.5556i  -0.7730 -
0.6344i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
  0.9239 - 0.3827i  -0.8819 + 0.4714i   0.8315 - 0.5556i  -0.7730 +
0.6344i
  0.7071 - 0.7071i  -0.5556 + 0.8315i   0.3827 - 0.9239i  -0.1951 +
0.9808i
  0.3827 - 0.9239i  -0.0980 + 0.9952i  -0.1951 - 0.9808i   0.4714 +
0.8819i
  0.0000 - 1.0000i   0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 +
0.3827i
 -0.3827 - 0.9239i   0.7730 + 0.6344i  -0.9808 - 0.1951i   0.9569 -
0.2903i
 -0.7071 - 0.7071i   0.9808 + 0.1951i  -0.9239 + 0.3827i   0.5556 -
0.8315i
 -0.9239 - 0.3827i   0.9569 - 0.2903i  -0.5556 + 0.8315i  -0.0980 -
0.9952i
```

```
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
 -0.9239 + 0.3827i   0.2903 - 0.9569i   0.5556 + 0.8315i  -0.9952 -
0.0980i
 -0.7071 + 0.7071i  -0.1951 - 0.9808i   0.9239 + 0.3827i  -0.8315 +
0.5556i
 -0.3827 + 0.9239i  -0.6344 - 0.7730i   0.9808 - 0.1951i  -0.2903 +
0.9569i
 -0.0000 + 1.0000i  -0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 +
0.9239i
  0.3827 + 0.9239i  -0.9952 + 0.0980i   0.1951 - 0.9808i   0.8819 +
0.4714i
  0.7071 + 0.7071i  -0.8315 + 0.5556i  -0.3827 - 0.9239i   0.9808 -
0.1951i
  0.9239 + 0.3827i  -0.4714 + 0.8819i  -0.8315 - 0.5556i   0.6344 -
0.7730i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i  -0.0000 -
1.0000i
  0.9239 - 0.3827i   0.4714 + 0.8819i  -0.8315 + 0.5556i  -0.6344 -
0.7730i
  0.7071 - 0.7071i   0.8315 + 0.5556i  -0.3827 + 0.9239i  -0.9808 -
0.1951i
  0.3827 - 0.9239i   0.9952 + 0.0980i   0.1951 + 0.9808i  -0.8819 +
0.4714i
 -0.0000 - 1.0000i   0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 +
0.9239i
 -0.3827 - 0.9239i   0.6344 - 0.7730i   0.9808 + 0.1951i   0.2903 +
0.9569i
 -0.7071 - 0.7071i   0.1951 - 0.9808i   0.9239 - 0.3827i   0.8315 +
0.5556i
 -0.9239 - 0.3827i  -0.2903 - 0.9569i   0.5556 - 0.8315i   0.9952 -
0.0980i
 -1.0000 - 0.0000i  -0.7071 - 0.7071i  -0.0000 - 1.0000i   0.7071 -
0.7071i
 -0.9239 + 0.3827i  -0.9569 - 0.2903i  -0.5556 - 0.8315i   0.0980 -
0.9952i
 -0.7071 + 0.7071i  -0.9808 + 0.1951i  -0.9239 - 0.3827i  -0.5556 -
0.8315i
 -0.3827 + 0.9239i  -0.7730 + 0.6344i  -0.9808 + 0.1951i  -0.9569 -
0.2903i
 -0.0000 + 1.0000i  -0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 +
0.3827i
  0.3827 + 0.9239i   0.0980 + 0.9952i  -0.1951 + 0.9808i  -0.4714 +
0.8819i
  0.7071 + 0.7071i   0.5556 + 0.8315i   0.3827 + 0.9239i   0.1951 +
0.9808i
  0.9239 + 0.3827i   0.8819 + 0.4714i   0.8315 + 0.5556i   0.7730 +
0.6344i

 Columns 9 through 12

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
```

```
  0.7071 - 0.7071i   0.6344 - 0.7730i   0.5556 - 0.8315i   0.4714 -
0.8819i
  0.0000 - 1.0000i  -0.1951 - 0.9808i  -0.3827 - 0.9239i  -0.5556 -
0.8315i
 -0.7071 - 0.7071i  -0.8819 - 0.4714i  -0.9808 - 0.1951i  -0.9952 +
0.0980i
 -1.0000 - 0.0000i  -0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 +
0.9239i
 -0.7071 + 0.7071i  -0.2903 + 0.9569i   0.1951 + 0.9808i   0.6344 +
0.7730i
 -0.0000 + 1.0000i   0.5556 + 0.8315i   0.9239 + 0.3827i   0.9808 -
0.1951i
  0.7071 + 0.7071i   0.9952 + 0.0980i   0.8315 - 0.5556i   0.2903 -
0.9569i
  1.0000 + 0.0000i   0.7071 - 0.7071i   0.0000 - 1.0000i  -0.7071 -
0.7071i
  0.7071 - 0.7071i  -0.0980 - 0.9952i  -0.8315 - 0.5556i  -0.9569 +
0.2903i
  0.0000 - 1.0000i  -0.8315 - 0.5556i  -0.9239 + 0.3827i  -0.1951 +
0.9808i
 -0.7071 - 0.7071i  -0.9569 + 0.2903i  -0.1951 + 0.9808i   0.7730 +
0.6344i
 -1.0000 - 0.0000i  -0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 -
0.3827i
 -0.7071 + 0.7071i   0.4714 + 0.8819i   0.9808 - 0.1951i   0.0980 -
0.9952i
 -0.0000 + 1.0000i   0.9808 + 0.1951i   0.3827 - 0.9239i  -0.8315 -
0.5556i
  0.7071 + 0.7071i   0.7730 - 0.6344i  -0.5556 - 0.8315i  -0.8819 +
0.4714i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
  0.7071 - 0.7071i  -0.7730 - 0.6344i  -0.5556 + 0.8315i   0.8819 +
0.4714i
  0.0000 - 1.0000i  -0.9808 + 0.1951i   0.3827 + 0.9239i   0.8315 -
0.5556i
 -0.7071 - 0.7071i  -0.4714 + 0.8819i   0.9808 + 0.1951i  -0.0980 -
0.9952i
 -1.0000 - 0.0000i   0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 -
0.3827i
 -0.7071 + 0.7071i   0.9569 + 0.2903i  -0.1951 - 0.9808i  -0.7730 +
0.6344i
 -0.0000 + 1.0000i   0.8315 - 0.5556i  -0.9239 - 0.3827i   0.1951 +
0.9808i
  0.7071 + 0.7071i   0.0980 - 0.9952i  -0.8315 + 0.5556i   0.9569 +
0.2903i
  1.0000 + 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
0.7071i
  0.7071 - 0.7071i  -0.9952 + 0.0980i   0.8315 + 0.5556i  -0.2903 -
0.9569i
 -0.0000 - 1.0000i  -0.5556 + 0.8315i   0.9239 - 0.3827i  -0.9808 -
0.1951i
 -0.7071 - 0.7071i   0.2903 + 0.9569i   0.1951 - 0.9808i  -0.6344 +
0.7730i
```

```
 -1.0000 - 0.0000i   0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 +
0.9239i
 -0.7071 + 0.7071i   0.8819 - 0.4714i  -0.9808 + 0.1951i   0.9952 +
0.0980i
 -0.0000 + 1.0000i   0.1951 - 0.9808i  -0.3827 + 0.9239i   0.5556 -
0.8315i
  0.7071 + 0.7071i  -0.6344 - 0.7730i   0.5556 + 0.8315i  -0.4714 -
0.8819i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
  0.7071 - 0.7071i  -0.6344 + 0.7730i   0.5556 - 0.8315i  -0.4714 +
0.8819i
 -0.0000 - 1.0000i   0.1951 + 0.9808i  -0.3827 - 0.9239i   0.5556 +
0.8315i
 -0.7071 - 0.7071i   0.8819 + 0.4714i  -0.9808 - 0.1951i   0.9952 -
0.0980i
 -1.0000 - 0.0000i   0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 -
0.9239i
 -0.7071 + 0.7071i   0.2903 - 0.9569i   0.1951 + 0.9808i  -0.6344 -
0.7730i
 -0.0000 + 1.0000i  -0.5556 - 0.8315i   0.9239 + 0.3827i  -0.9808 +
0.1951i
  0.7071 + 0.7071i  -0.9952 - 0.0980i   0.8315 - 0.5556i  -0.2903 +
0.9569i
  1.0000 + 0.0000i  -0.7071 + 0.7071i  -0.0000 - 1.0000i   0.7071 +
0.7071i
  0.7071 - 0.7071i   0.0980 + 0.9952i  -0.8315 - 0.5556i   0.9569 -
0.2903i
 -0.0000 - 1.0000i   0.8315 + 0.5556i  -0.9239 + 0.3827i   0.1951 -
0.9808i
 -0.7071 - 0.7071i   0.9569 - 0.2903i  -0.1951 + 0.9808i  -0.7730 -
0.6344i
 -1.0000 - 0.0000i   0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 +
0.3827i
 -0.7071 + 0.7071i  -0.4714 - 0.8819i   0.9808 - 0.1951i  -0.0980 +
0.9952i
 -0.0000 + 1.0000i  -0.9808 - 0.1951i   0.3827 - 0.9239i   0.8315 +
0.5556i
  0.7071 + 0.7071i  -0.7730 + 0.6344i  -0.5556 - 0.8315i   0.8819 -
0.4714i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
  0.7071 - 0.7071i   0.7730 + 0.6344i  -0.5556 + 0.8315i  -0.8819 -
0.4714i
 -0.0000 - 1.0000i   0.9808 - 0.1951i   0.3827 + 0.9239i  -0.8315 +
0.5556i
 -0.7071 - 0.7071i   0.4714 - 0.8819i   0.9808 + 0.1951i   0.0980 +
0.9952i
 -1.0000 + 0.0000i  -0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 +
0.3827i
 -0.7071 + 0.7071i  -0.9569 - 0.2903i  -0.1951 - 0.9808i   0.7730 -
0.6344i
 -0.0000 + 1.0000i  -0.8315 + 0.5556i  -0.9239 - 0.3827i  -0.1951 -
0.9808i
```

```
  0.7071 + 0.7071i  -0.0980 + 0.9952i  -0.8315 + 0.5556i  -0.9569 -
0.2903i
  1.0000 + 0.0000i   0.7071 + 0.7071i  -0.0000 + 1.0000i  -0.7071 +
0.7071i
  0.7071 - 0.7071i   0.9952 - 0.0980i   0.8315 + 0.5556i   0.2903 +
0.9569i
 -0.0000 - 1.0000i   0.5556 - 0.8315i   0.9239 - 0.3827i   0.9808 +
0.1951i
 -0.7071 - 0.7071i  -0.2903 - 0.9569i   0.1951 - 0.9808i   0.6344 -
0.7730i
 -1.0000 - 0.0000i  -0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 -
0.9239i
 -0.7071 + 0.7071i  -0.8819 + 0.4714i  -0.9808 + 0.1951i  -0.9952 -
0.0980i
 -0.0000 + 1.0000i  -0.1951 + 0.9808i  -0.3827 + 0.9239i  -0.5556 +
0.8315i
  0.7071 + 0.7071i   0.6344 + 0.7730i   0.5556 + 0.8315i   0.4714 +
0.8819i

 Columns 13 through 16

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  0.3827 - 0.9239i   0.2903 - 0.9569i   0.1951 - 0.9808i   0.0980 -
0.9952i
 -0.7071 - 0.7071i  -0.8315 - 0.5556i  -0.9239 - 0.3827i  -0.9808 -
0.1951i
 -0.9239 + 0.3827i  -0.7730 + 0.6344i  -0.5556 + 0.8315i  -0.2903 +
0.9569i
 -0.0000 + 1.0000i   0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 +
0.3827i
  0.9239 + 0.3827i   0.9952 - 0.0980i   0.8315 - 0.5556i   0.4714 -
0.8819i
  0.7071 - 0.7071i   0.1951 - 0.9808i  -0.3827 - 0.9239i  -0.8315 -
0.5556i
 -0.3827 - 0.9239i  -0.8819 - 0.4714i  -0.9808 + 0.1951i  -0.6344 +
0.7730i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
 -0.3827 + 0.9239i   0.4714 + 0.8819i   0.9808 + 0.1951i   0.7730 -
0.6344i
  0.7071 + 0.7071i   0.9808 - 0.1951i   0.3827 - 0.9239i  -0.5556 -
0.8315i
  0.9239 - 0.3827i   0.0980 - 0.9952i  -0.8315 - 0.5556i  -0.8819 +
0.4714i
  0.0000 - 1.0000i  -0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 +
0.9239i
 -0.9239 - 0.3827i  -0.6344 + 0.7730i   0.5556 + 0.8315i   0.9569 -
0.2903i
 -0.7071 + 0.7071i   0.5556 + 0.8315i   0.9239 - 0.3827i  -0.1951 -
0.9808i
  0.3827 + 0.9239i   0.9569 - 0.2903i  -0.1951 - 0.9808i  -0.9952 +
0.0980i
```

```
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
  0.3827 - 0.9239i  -0.9569 - 0.2903i  -0.1951 + 0.9808i   0.9952 +
0.0980i
 -0.7071 - 0.7071i  -0.5556 + 0.8315i   0.9239 + 0.3827i   0.1951 -
0.9808i
 -0.9239 + 0.3827i   0.6344 + 0.7730i   0.5556 - 0.8315i  -0.9569 -
0.2903i
 -0.0000 + 1.0000i   0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 +
0.9239i
  0.9239 + 0.3827i  -0.0980 - 0.9952i  -0.8315 + 0.5556i   0.8819 +
0.4714i
  0.7071 - 0.7071i  -0.9808 - 0.1951i   0.3827 + 0.9239i   0.5556 -
0.8315i
 -0.3827 - 0.9239i  -0.4714 + 0.8819i   0.9808 - 0.1951i  -0.7730 -
0.6344i
 -1.0000 - 0.0000i   0.7071 + 0.7071i  -0.0000 - 1.0000i  -0.7071 +
0.7071i
 -0.3827 + 0.9239i   0.8819 - 0.4714i  -0.9808 - 0.1951i   0.6344 +
0.7730i
  0.7071 + 0.7071i  -0.1951 - 0.9808i  -0.3827 + 0.9239i   0.8315 -
0.5556i
  0.9239 - 0.3827i  -0.9952 - 0.0980i   0.8315 + 0.5556i  -0.4714 -
0.8819i
 -0.0000 - 1.0000i  -0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 +
0.3827i
 -0.9239 - 0.3827i   0.7730 + 0.6344i  -0.5556 - 0.8315i   0.2903 +
0.9569i
 -0.7071 + 0.7071i   0.8315 - 0.5556i  -0.9239 + 0.3827i   0.9808 -
0.1951i
  0.3827 + 0.9239i  -0.2903 - 0.9569i   0.1951 + 0.9808i  -0.0980 -
0.9952i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
  0.3827 - 0.9239i  -0.2903 + 0.9569i   0.1951 - 0.9808i  -0.0980 +
0.9952i
 -0.7071 - 0.7071i   0.8315 + 0.5556i  -0.9239 - 0.3827i   0.9808 +
0.1951i
 -0.9239 + 0.3827i   0.7730 - 0.6344i  -0.5556 + 0.8315i   0.2903 -
0.9569i
 -0.0000 + 1.0000i  -0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 -
0.3827i
  0.9239 + 0.3827i  -0.9952 + 0.0980i   0.8315 - 0.5556i  -0.4714 +
0.8819i
  0.7071 - 0.7071i  -0.1951 + 0.9808i  -0.3827 - 0.9239i   0.8315 +
0.5556i
 -0.3827 - 0.9239i   0.8819 + 0.4714i  -0.9808 + 0.1951i   0.6344 -
0.7730i
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
 -0.3827 + 0.9239i  -0.4714 - 0.8819i   0.9808 + 0.1951i  -0.7730 +
0.6344i
  0.7071 + 0.7071i  -0.9808 + 0.1951i   0.3827 - 0.9239i   0.5556 +
0.8315i
```

```
  0.9239 - 0.3827i  -0.0980 + 0.9952i  -0.8315 - 0.5556i   0.8819 -
0.4714i
  0.0000 - 1.0000i   0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 -
0.9239i
 -0.9239 - 0.3827i   0.6344 - 0.7730i   0.5556 + 0.8315i  -0.9569 +
0.2903i
 -0.7071 + 0.7071i  -0.5556 - 0.8315i   0.9239 - 0.3827i   0.1951 +
0.9808i
  0.3827 + 0.9239i  -0.9569 + 0.2903i  -0.1951 - 0.9808i   0.9952 -
0.0980i
  1.0000 + 0.0000i   0.0000 + 1.0000i  -1.0000 + 0.0000i   0.0000 -
1.0000i
  0.3827 - 0.9239i   0.9569 + 0.2903i  -0.1951 + 0.9808i  -0.9952 -
0.0980i
 -0.7071 - 0.7071i   0.5556 - 0.8315i   0.9239 + 0.3827i  -0.1951 +
0.9808i
 -0.9239 + 0.3827i  -0.6344 - 0.7730i   0.5556 - 0.8315i   0.9569 +
0.2903i
 -0.0000 + 1.0000i  -0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 -
0.9239i
  0.9239 + 0.3827i   0.0980 + 0.9952i  -0.8315 + 0.5556i  -0.8819 -
0.4714i
  0.7071 - 0.7071i   0.9808 + 0.1951i   0.3827 + 0.9239i  -0.5556 +
0.8315i
 -0.3827 - 0.9239i   0.4714 - 0.8819i   0.9808 - 0.1951i   0.7730 +
0.6344i
 -1.0000 + 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
 -0.3827 + 0.9239i  -0.8819 + 0.4714i  -0.9808 - 0.1951i  -0.6344 -
0.7730i
  0.7071 + 0.7071i   0.1951 + 0.9808i  -0.3827 + 0.9239i  -0.8315 +
0.5556i
  0.9239 - 0.3827i   0.9952 + 0.0980i   0.8315 + 0.5556i   0.4714 +
0.8819i
  0.0000 - 1.0000i   0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 -
0.3827i
 -0.9239 - 0.3827i  -0.7730 - 0.6344i  -0.5556 - 0.8315i  -0.2903 -
0.9569i
 -0.7071 + 0.7071i  -0.8315 + 0.5556i  -0.9239 + 0.3827i  -0.9808 +
0.1951i
  0.3827 + 0.9239i   0.2903 + 0.9569i   0.1951 + 0.9808i   0.0980 +
0.9952i

 Columns 17 through 20

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  0.0000 - 1.0000i  -0.0980 - 0.9952i  -0.1951 - 0.9808i  -0.2903 -
0.9569i
 -1.0000 - 0.0000i  -0.9808 + 0.1951i  -0.9239 + 0.3827i  -0.8315 +
0.5556i
 -0.0000 + 1.0000i   0.2903 + 0.9569i   0.5556 + 0.8315i   0.7730 +
0.6344i
```

```
  1.0000 + 0.0000i   0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 -
0.9239i
  0.0000 - 1.0000i  -0.4714 - 0.8819i  -0.8315 - 0.5556i  -0.9952 -
0.0980i
 -1.0000 - 0.0000i  -0.8315 + 0.5556i  -0.3827 + 0.9239i   0.1951 +
0.9808i
 -0.0000 + 1.0000i   0.6344 + 0.7730i   0.9808 + 0.1951i   0.8819 -
0.4714i
  1.0000 + 0.0000i   0.7071 - 0.7071i   0.0000 - 1.0000i  -0.7071 -
0.7071i
  0.0000 - 1.0000i  -0.7730 - 0.6344i  -0.9808 + 0.1951i  -0.4714 +
0.8819i
 -1.0000 - 0.0000i  -0.5556 + 0.8315i   0.3827 + 0.9239i   0.9808 +
0.1951i
 -0.0000 + 1.0000i   0.8819 + 0.4714i   0.8315 - 0.5556i  -0.0980 -
0.9952i
  1.0000 + 0.0000i   0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 +
0.3827i
 -0.0000 - 1.0000i  -0.9569 - 0.2903i  -0.5556 + 0.8315i   0.6344 +
0.7730i
 -1.0000 - 0.0000i  -0.1951 + 0.9808i   0.9239 + 0.3827i   0.5556 -
0.8315i
 -0.0000 + 1.0000i   0.9952 + 0.0980i   0.1951 - 0.9808i  -0.9569 -
0.2903i
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
 -0.0000 - 1.0000i  -0.9952 + 0.0980i   0.1951 + 0.9808i   0.9569 -
0.2903i
 -1.0000 - 0.0000i   0.1951 + 0.9808i   0.9239 - 0.3827i  -0.5556 -
0.8315i
 -0.0000 + 1.0000i   0.9569 - 0.2903i  -0.5556 - 0.8315i  -0.6344 +
0.7730i
  1.0000 + 0.0000i  -0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 +
0.3827i
 -0.0000 - 1.0000i  -0.8819 + 0.4714i   0.8315 + 0.5556i   0.0980 -
0.9952i
 -1.0000 - 0.0000i   0.5556 + 0.8315i   0.3827 - 0.9239i  -0.9808 +
0.1951i
 -0.0000 + 1.0000i   0.7730 - 0.6344i  -0.9808 - 0.1951i   0.4714 +
0.8819i
  1.0000 + 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
0.7071i
 -0.0000 - 1.0000i  -0.6344 + 0.7730i   0.9808 - 0.1951i  -0.8819 -
0.4714i
 -1.0000 + 0.0000i   0.8315 + 0.5556i  -0.3827 - 0.9239i  -0.1951 +
0.9808i
 -0.0000 + 1.0000i   0.4714 - 0.8819i  -0.8315 + 0.5556i   0.9952 -
0.0980i
  1.0000 + 0.0000i  -0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 -
0.9239i
 -0.0000 - 1.0000i  -0.2903 + 0.9569i   0.5556 - 0.8315i  -0.7730 +
0.6344i
 -1.0000 - 0.0000i   0.9808 + 0.1951i  -0.9239 - 0.3827i   0.8315 +
0.5556i
```

```
 -0.0000 + 1.0000i   0.0980 - 0.9952i  -0.1951 + 0.9808i   0.2903 -
0.9569i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
  0.0000 - 1.0000i   0.0980 + 0.9952i  -0.1951 - 0.9808i   0.2903 +
0.9569i
 -1.0000 + 0.0000i   0.9808 - 0.1951i  -0.9239 + 0.3827i   0.8315 -
0.5556i
 -0.0000 + 1.0000i  -0.2903 - 0.9569i   0.5556 + 0.8315i  -0.7730 -
0.6344i
  1.0000 + 0.0000i  -0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 +
0.9239i
  0.0000 - 1.0000i   0.4714 + 0.8819i  -0.8315 - 0.5556i   0.9952 +
0.0980i
 -1.0000 - 0.0000i   0.8315 - 0.5556i  -0.3827 + 0.9239i  -0.1951 -
0.9808i
 -0.0000 + 1.0000i  -0.6344 - 0.7730i   0.9808 + 0.1951i  -0.8819 +
0.4714i
  1.0000 + 0.0000i  -0.7071 + 0.7071i   0.0000 - 1.0000i   0.7071 +
0.7071i
  0.0000 - 1.0000i   0.7730 + 0.6344i  -0.9808 + 0.1951i   0.4714 -
0.8819i
 -1.0000 + 0.0000i   0.5556 - 0.8315i   0.3827 + 0.9239i  -0.9808 -
0.1951i
 -0.0000 + 1.0000i  -0.8819 - 0.4714i   0.8315 - 0.5556i   0.0980 +
0.9952i
  1.0000 + 0.0000i  -0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 -
0.3827i
  0.0000 - 1.0000i   0.9569 + 0.2903i  -0.5556 + 0.8315i  -0.6344 -
0.7730i
 -1.0000 - 0.0000i   0.1951 - 0.9808i   0.9239 + 0.3827i  -0.5556 +
0.8315i
  0.0000 + 1.0000i  -0.9952 - 0.0980i   0.1951 - 0.9808i   0.9569 +
0.2903i
  1.0000 + 0.0000i   0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
  0.0000 - 1.0000i   0.9952 - 0.0980i   0.1951 + 0.9808i  -0.9569 +
0.2903i
 -1.0000 + 0.0000i  -0.1951 - 0.9808i   0.9239 - 0.3827i   0.5556 +
0.8315i
 -0.0000 + 1.0000i  -0.9569 + 0.2903i  -0.5556 - 0.8315i   0.6344 -
0.7730i
  1.0000 - 0.0000i   0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 -
0.3827i
  0.0000 - 1.0000i   0.8819 - 0.4714i   0.8315 + 0.5556i  -0.0980 +
0.9952i
 -1.0000 - 0.0000i  -0.5556 - 0.8315i   0.3827 - 0.9239i   0.9808 -
0.1951i
  0.0000 + 1.0000i  -0.7730 + 0.6344i  -0.9808 - 0.1951i  -0.4714 -
0.8819i
  1.0000 + 0.0000i   0.7071 + 0.7071i   0.0000 + 1.0000i  -0.7071 +
0.7071i
  0.0000 - 1.0000i   0.6344 - 0.7730i   0.9808 - 0.1951i   0.8819 +
0.4714i
```

```
 -1.0000 + 0.0000i  -0.8315 - 0.5556i  -0.3827 - 0.9239i   0.1951 -
0.9808i
 -0.0000 + 1.0000i  -0.4714 + 0.8819i  -0.8315 + 0.5556i  -0.9952 +
0.0980i
  1.0000 + 0.0000i   0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 +
0.9239i
  0.0000 - 1.0000i   0.2903 - 0.9569i   0.5556 - 0.8315i   0.7730 -
0.6344i
 -1.0000 - 0.0000i  -0.9808 - 0.1951i  -0.9239 - 0.3827i  -0.8315 -
0.5556i
  0.0000 + 1.0000i  -0.0980 + 0.9952i  -0.1951 + 0.9808i  -0.2903 +
0.9569i

 Columns 21 through 24

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -0.3827 - 0.9239i  -0.4714 - 0.8819i  -0.5556 - 0.8315i  -0.6344 -
0.7730i
 -0.7071 + 0.7071i  -0.5556 + 0.8315i  -0.3827 + 0.9239i  -0.1951 +
0.9808i
  0.9239 + 0.3827i   0.9952 + 0.0980i   0.9808 - 0.1951i   0.8819 -
0.4714i
  0.0000 - 1.0000i  -0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 -
0.3827i
 -0.9239 + 0.3827i  -0.6344 + 0.7730i  -0.1951 + 0.9808i   0.2903 +
0.9569i
  0.7071 + 0.7071i   0.9808 + 0.1951i   0.9239 - 0.3827i   0.5556 -
0.8315i
  0.3827 - 0.9239i  -0.2903 - 0.9569i  -0.8315 - 0.5556i  -0.9952 +
0.0980i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
  0.3827 + 0.9239i   0.9569 + 0.2903i   0.8315 - 0.5556i   0.0980 -
0.9952i
  0.7071 - 0.7071i  -0.1951 - 0.9808i  -0.9239 - 0.3827i  -0.8315 +
0.5556i
 -0.9239 - 0.3827i  -0.7730 + 0.6344i   0.1951 + 0.9808i   0.9569 +
0.2903i
 -0.0000 + 1.0000i   0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 -
0.9239i
  0.9239 - 0.3827i  -0.0980 - 0.9952i  -0.9808 - 0.1951i  -0.4714 +
0.8819i
 -0.7071 - 0.7071i  -0.8315 + 0.5556i   0.3827 + 0.9239i   0.9808 -
0.1951i
 -0.3827 + 0.9239i   0.8819 + 0.4714i   0.5556 - 0.8315i  -0.7730 -
0.6344i
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
 -0.3827 - 0.9239i  -0.8819 + 0.4714i   0.5556 + 0.8315i   0.7730 -
0.6344i
 -0.7071 + 0.7071i   0.8315 + 0.5556i   0.3827 - 0.9239i  -0.9808 -
0.1951i
```

```
  0.9239 + 0.3827i   0.0980 - 0.9952i  -0.9808 + 0.1951i   0.4714 +
0.8819i
 -0.0000 - 1.0000i  -0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 -
0.9239i
 -0.9239 + 0.3827i   0.7730 + 0.6344i   0.1951 - 0.9808i  -0.9569 +
0.2903i
  0.7071 + 0.7071i   0.1951 - 0.9808i  -0.9239 + 0.3827i   0.8315 +
0.5556i
  0.3827 - 0.9239i  -0.9569 + 0.2903i   0.8315 + 0.5556i  -0.0980 -
0.9952i
 -1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
  0.3827 + 0.9239i   0.2903 - 0.9569i  -0.8315 + 0.5556i   0.9952 +
0.0980i
  0.7071 - 0.7071i  -0.9808 + 0.1951i   0.9239 + 0.3827i  -0.5556 -
0.8315i
 -0.9239 - 0.3827i   0.6344 + 0.7730i  -0.1951 - 0.9808i  -0.2903 +
0.9569i
 -0.0000 + 1.0000i   0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 -
0.3827i
  0.9239 - 0.3827i  -0.9952 + 0.0980i   0.9808 + 0.1951i  -0.8819 -
0.4714i
 -0.7071 - 0.7071i   0.5556 + 0.8315i  -0.3827 - 0.9239i   0.1951 +
0.9808i
 -0.3827 + 0.9239i   0.4714 - 0.8819i  -0.5556 + 0.8315i   0.6344 -
0.7730i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
 -0.3827 - 0.9239i   0.4714 + 0.8819i  -0.5556 - 0.8315i   0.6344 +
0.7730i
 -0.7071 + 0.7071i   0.5556 - 0.8315i  -0.3827 + 0.9239i   0.1951 -
0.9808i
  0.9239 + 0.3827i  -0.9952 - 0.0980i   0.9808 - 0.1951i  -0.8819 +
0.4714i
  0.0000 - 1.0000i   0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 +
0.3827i
 -0.9239 + 0.3827i   0.6344 - 0.7730i  -0.1951 + 0.9808i  -0.2903 -
0.9569i
  0.7071 + 0.7071i  -0.9808 - 0.1951i   0.9239 - 0.3827i  -0.5556 +
0.8315i
  0.3827 - 0.9239i   0.2903 + 0.9569i  -0.8315 - 0.5556i   0.9952 -
0.0980i
 -1.0000 + 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
  0.3827 + 0.9239i  -0.9569 - 0.2903i   0.8315 - 0.5556i  -0.0980 +
0.9952i
  0.7071 - 0.7071i   0.1951 + 0.9808i  -0.9239 - 0.3827i   0.8315 -
0.5556i
 -0.9239 - 0.3827i   0.7730 - 0.6344i   0.1951 + 0.9808i  -0.9569 -
0.2903i
  0.0000 + 1.0000i  -0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 +
0.9239i
  0.9239 - 0.3827i   0.0980 + 0.9952i  -0.9808 - 0.1951i   0.4714 -
0.8819i
```

```
 -0.7071 - 0.7071i   0.8315 - 0.5556i   0.3827 + 0.9239i  -0.9808 +
0.1951i
 -0.3827 + 0.9239i  -0.8819 - 0.4714i   0.5556 - 0.8315i   0.7730 +
0.6344i
  1.0000 + 0.0000i   0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
 -0.3827 - 0.9239i   0.8819 - 0.4714i   0.5556 + 0.8315i  -0.7730 +
0.6344i
 -0.7071 + 0.7071i  -0.8315 - 0.5556i   0.3827 - 0.9239i   0.9808 +
0.1951i
  0.9239 + 0.3827i  -0.0980 + 0.9952i  -0.9808 + 0.1951i  -0.4714 -
0.8819i
  0.0000 - 1.0000i   0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 +
0.9239i
 -0.9239 + 0.3827i  -0.7730 - 0.6344i   0.1951 - 0.9808i   0.9569 -
0.2903i
  0.7071 + 0.7071i  -0.1951 + 0.9808i  -0.9239 + 0.3827i  -0.8315 -
0.5556i
  0.3827 - 0.9239i   0.9569 - 0.2903i   0.8315 + 0.5556i   0.0980 +
0.9952i
 -1.0000 - 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
  0.3827 + 0.9239i  -0.2903 + 0.9569i  -0.8315 + 0.5556i  -0.9952 -
0.0980i
  0.7071 - 0.7071i   0.9808 - 0.1951i   0.9239 + 0.3827i   0.5556 +
0.8315i
 -0.9239 - 0.3827i  -0.6344 - 0.7730i  -0.1951 - 0.9808i   0.2903 -
0.9569i
 -0.0000 + 1.0000i  -0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 +
0.3827i
  0.9239 - 0.3827i   0.9952 - 0.0980i   0.9808 + 0.1951i   0.8819 +
0.4714i
 -0.7071 - 0.7071i  -0.5556 - 0.8315i  -0.3827 - 0.9239i  -0.1951 -
0.9808i
 -0.3827 + 0.9239i  -0.4714 + 0.8819i  -0.5556 + 0.8315i  -0.6344 +
0.7730i

 Columns 25 through 28

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -0.7071 - 0.7071i  -0.7730 - 0.6344i  -0.8315 - 0.5556i  -0.8819 -
0.4714i
 -0.0000 + 1.0000i   0.1951 + 0.9808i   0.3827 + 0.9239i   0.5556 +
0.8315i
  0.7071 - 0.7071i   0.4714 - 0.8819i   0.1951 - 0.9808i  -0.0980 -
0.9952i
 -1.0000 - 0.0000i  -0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 +
0.9239i
  0.7071 + 0.7071i   0.9569 + 0.2903i   0.9808 - 0.1951i   0.7730 -
0.6344i
  0.0000 - 1.0000i  -0.5556 - 0.8315i  -0.9239 - 0.3827i  -0.9808 +
0.1951i
```

```
 -0.7071 + 0.7071i  -0.0980 + 0.9952i   0.5556 + 0.8315i   0.9569 +
0.2903i
  1.0000 + 0.0000i   0.7071 - 0.7071i  -0.0000 - 1.0000i  -0.7071 -
0.7071i
 -0.7071 - 0.7071i  -0.9952 + 0.0980i  -0.5556 + 0.8315i   0.2903 +
0.9569i
 -0.0000 + 1.0000i   0.8315 + 0.5556i   0.9239 - 0.3827i   0.1951 -
0.9808i
  0.7071 - 0.7071i  -0.2903 - 0.9569i  -0.9808 - 0.1951i  -0.6344 +
0.7730i
 -1.0000 - 0.0000i  -0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 -
0.3827i
  0.7071 + 0.7071i   0.8819 - 0.4714i  -0.1951 - 0.9808i  -0.9952 -
0.0980i
 -0.0000 - 1.0000i  -0.9808 - 0.1951i  -0.3827 + 0.9239i   0.8315 +
0.5556i
 -0.7071 + 0.7071i   0.6344 + 0.7730i   0.8315 - 0.5556i  -0.4714 -
0.8819i
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 + 0.0000i  -0.0000 +
1.0000i
 -0.7071 - 0.7071i  -0.6344 + 0.7730i   0.8315 + 0.5556i   0.4714 -
0.8819i
 -0.0000 + 1.0000i   0.9808 - 0.1951i  -0.3827 - 0.9239i  -0.8315 +
0.5556i
  0.7071 - 0.7071i  -0.8819 - 0.4714i  -0.1951 + 0.9808i   0.9952 -
0.0980i
 -1.0000 - 0.0000i   0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 -
0.3827i
  0.7071 + 0.7071i   0.2903 - 0.9569i  -0.9808 + 0.1951i   0.6344 +
0.7730i
  0.0000 - 1.0000i  -0.8315 + 0.5556i   0.9239 + 0.3827i  -0.1951 -
0.9808i
 -0.7071 + 0.7071i   0.9952 + 0.0980i  -0.5556 - 0.8315i  -0.2903 +
0.9569i
  1.0000 + 0.0000i  -0.7071 - 0.7071i   0.0000 + 1.0000i   0.7071 -
0.7071i
 -0.7071 - 0.7071i   0.0980 + 0.9952i   0.5556 - 0.8315i  -0.9569 +
0.2903i
 -0.0000 + 1.0000i   0.5556 - 0.8315i  -0.9239 + 0.3827i   0.9808 +
0.1951i
  0.7071 - 0.7071i  -0.9569 + 0.2903i   0.9808 + 0.1951i  -0.7730 -
0.6344i
 -1.0000 + 0.0000i   0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 +
0.9239i
  0.7071 + 0.7071i  -0.4714 - 0.8819i   0.1951 + 0.9808i   0.0980 -
0.9952i
  0.0000 - 1.0000i  -0.1951 + 0.9808i   0.3827 - 0.9239i  -0.5556 +
0.8315i
 -0.7071 + 0.7071i   0.7730 - 0.6344i  -0.8315 + 0.5556i   0.8819 -
0.4714i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 - 0.0000i  -1.0000 -
0.0000i
 -0.7071 - 0.7071i   0.7730 + 0.6344i  -0.8315 - 0.5556i   0.8819 +
0.4714i
```

```
 -0.0000 + 1.0000i  -0.1951 - 0.9808i   0.3827 + 0.9239i  -0.5556 -
0.8315i
  0.7071 - 0.7071i  -0.4714 + 0.8819i   0.1951 - 0.9808i   0.0980 +
0.9952i
 -1.0000 - 0.0000i   0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 -
0.9239i
  0.7071 + 0.7071i  -0.9569 - 0.2903i   0.9808 - 0.1951i  -0.7730 +
0.6344i
  0.0000 - 1.0000i   0.5556 + 0.8315i  -0.9239 - 0.3827i   0.9808 -
0.1951i
 -0.7071 + 0.7071i   0.0980 - 0.9952i   0.5556 + 0.8315i  -0.9569 -
0.2903i
  1.0000 + 0.0000i  -0.7071 + 0.7071i  -0.0000 - 1.0000i   0.7071 +
0.7071i
 -0.7071 - 0.7071i   0.9952 - 0.0980i  -0.5556 + 0.8315i  -0.2903 -
0.9569i
  0.0000 + 1.0000i  -0.8315 - 0.5556i   0.9239 - 0.3827i  -0.1951 +
0.9808i
  0.7071 - 0.7071i   0.2903 + 0.9569i  -0.9808 - 0.1951i   0.6344 -
0.7730i
 -1.0000 - 0.0000i   0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 +
0.3827i
  0.7071 + 0.7071i  -0.8819 + 0.4714i  -0.1951 - 0.9808i   0.9952 +
0.0980i
  0.0000 - 1.0000i   0.9808 + 0.1951i  -0.3827 + 0.9239i  -0.8315 -
0.5556i
 -0.7071 + 0.7071i  -0.6344 - 0.7730i   0.8315 - 0.5556i   0.4714 +
0.8819i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 + 0.0000i   0.0000 -
1.0000i
 -0.7071 - 0.7071i   0.6344 - 0.7730i   0.8315 + 0.5556i  -0.4714 +
0.8819i
 -0.0000 + 1.0000i  -0.9808 + 0.1951i  -0.3827 - 0.9239i   0.8315 -
0.5556i
  0.7071 - 0.7071i   0.8819 + 0.4714i  -0.1951 + 0.9808i  -0.9952 +
0.0980i
 -1.0000 - 0.0000i  -0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 +
0.3827i
  0.7071 + 0.7071i  -0.2903 + 0.9569i  -0.9808 + 0.1951i  -0.6344 -
0.7730i
  0.0000 - 1.0000i   0.8315 - 0.5556i   0.9239 + 0.3827i   0.1951 +
0.9808i
 -0.7071 + 0.7071i  -0.9952 - 0.0980i  -0.5556 - 0.8315i   0.2903 -
0.9569i
  1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 + 1.0000i  -0.7071 +
0.7071i
 -0.7071 - 0.7071i  -0.0980 - 0.9952i   0.5556 - 0.8315i   0.9569 -
0.2903i
 -0.0000 + 1.0000i  -0.5556 + 0.8315i  -0.9239 + 0.3827i  -0.9808 -
0.1951i
  0.7071 - 0.7071i   0.9569 - 0.2903i   0.9808 + 0.1951i   0.7730 +
0.6344i
 -1.0000 - 0.0000i  -0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 -
0.9239i
```

```
  0.7071 + 0.7071i   0.4714 + 0.8819i   0.1951 + 0.9808i  -0.0980 +
0.9952i
  0.0000 - 1.0000i   0.1951 - 0.9808i   0.3827 - 0.9239i   0.5556 -
0.8315i
 -0.7071 + 0.7071i  -0.7730 + 0.6344i  -0.8315 + 0.5556i  -0.8819 +
0.4714i

 Columns 29 through 32

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -0.9239 - 0.3827i  -0.9569 - 0.2903i  -0.9808 - 0.1951i  -0.9952 -
0.0980i
  0.7071 + 0.7071i   0.8315 + 0.5556i   0.9239 + 0.3827i   0.9808 +
0.1951i
 -0.3827 - 0.9239i  -0.6344 - 0.7730i  -0.8315 - 0.5556i  -0.9569 -
0.2903i
 -0.0000 + 1.0000i   0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 +
0.3827i
  0.3827 - 0.9239i  -0.0980 - 0.9952i  -0.5556 - 0.8315i  -0.8819 -
0.4714i
 -0.7071 + 0.7071i  -0.1951 + 0.9808i   0.3827 + 0.9239i   0.8315 +
0.5556i
  0.9239 - 0.3827i   0.4714 - 0.8819i  -0.1951 - 0.9808i  -0.7730 -
0.6344i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
  0.9239 + 0.3827i   0.8819 - 0.4714i   0.1951 - 0.9808i  -0.6344 -
0.7730i
 -0.7071 - 0.7071i  -0.9808 + 0.1951i  -0.3827 + 0.9239i   0.5556 +
0.8315i
  0.3827 + 0.9239i   0.9952 + 0.0980i   0.5556 - 0.8315i  -0.4714 -
0.8819i
 -0.0000 - 1.0000i  -0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 +
0.9239i
 -0.3827 + 0.9239i   0.7730 + 0.6344i   0.8315 - 0.5556i  -0.2903 -
0.9569i
  0.7071 - 0.7071i  -0.5556 - 0.8315i  -0.9239 + 0.3827i   0.1951 +
0.9808i
 -0.9239 + 0.3827i   0.2903 + 0.9569i   0.9808 - 0.1951i  -0.0980 -
0.9952i
  1.0000 + 0.0000i  -0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
 -0.9239 - 0.3827i  -0.2903 + 0.9569i   0.9808 + 0.1951i   0.0980 -
0.9952i
  0.7071 + 0.7071i   0.5556 - 0.8315i  -0.9239 - 0.3827i  -0.1951 +
0.9808i
 -0.3827 - 0.9239i  -0.7730 + 0.6344i   0.8315 + 0.5556i   0.2903 -
0.9569i
 -0.0000 + 1.0000i   0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 +
0.9239i
  0.3827 - 0.9239i  -0.9952 + 0.0980i   0.5556 + 0.8315i   0.4714 -
0.8819i
```

```
 -0.7071 + 0.7071i   0.9808 + 0.1951i  -0.3827 - 0.9239i  -0.5556 +
0.8315i
  0.9239 - 0.3827i  -0.8819 - 0.4714i   0.1951 + 0.9808i   0.6344 -
0.7730i
 -1.0000 + 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
  0.9239 + 0.3827i  -0.4714 - 0.8819i  -0.1951 + 0.9808i   0.7730 -
0.6344i
 -0.7071 - 0.7071i   0.1951 + 0.9808i   0.3827 - 0.9239i  -0.8315 +
0.5556i
  0.3827 + 0.9239i   0.0980 - 0.9952i  -0.5556 + 0.8315i   0.8819 -
0.4714i
  0.0000 - 1.0000i  -0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 +
0.3827i
 -0.3827 + 0.9239i   0.6344 - 0.7730i  -0.8315 + 0.5556i   0.9569 -
0.2903i
  0.7071 - 0.7071i  -0.8315 + 0.5556i   0.9239 - 0.3827i  -0.9808 +
0.1951i
 -0.9239 + 0.3827i   0.9569 - 0.2903i  -0.9808 + 0.1951i   0.9952 -
0.0980i
  1.0000 + 0.0000i  -1.0000 + 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
 -0.9239 - 0.3827i   0.9569 + 0.2903i  -0.9808 - 0.1951i   0.9952 +
0.0980i
  0.7071 + 0.7071i  -0.8315 - 0.5556i   0.9239 + 0.3827i  -0.9808 -
0.1951i
 -0.3827 - 0.9239i   0.6344 + 0.7730i  -0.8315 - 0.5556i   0.9569 +
0.2903i
  0.0000 + 1.0000i  -0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 -
0.3827i
  0.3827 - 0.9239i   0.0980 + 0.9952i  -0.5556 - 0.8315i   0.8819 +
0.4714i
 -0.7071 + 0.7071i   0.1951 - 0.9808i   0.3827 + 0.9239i  -0.8315 -
0.5556i
  0.9239 - 0.3827i  -0.4714 + 0.8819i  -0.1951 - 0.9808i   0.7730 +
0.6344i
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
  0.9239 + 0.3827i  -0.8819 + 0.4714i   0.1951 - 0.9808i   0.6344 +
0.7730i
 -0.7071 - 0.7071i   0.9808 - 0.1951i  -0.3827 + 0.9239i  -0.5556 -
0.8315i
  0.3827 + 0.9239i  -0.9952 - 0.0980i   0.5556 - 0.8315i   0.4714 +
0.8819i
  0.0000 - 1.0000i   0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 -
0.9239i
 -0.3827 + 0.9239i  -0.7730 - 0.6344i   0.8315 - 0.5556i   0.2903 +
0.9569i
  0.7071 - 0.7071i   0.5556 + 0.8315i  -0.9239 + 0.3827i  -0.1951 -
0.9808i
 -0.9239 + 0.3827i  -0.2903 - 0.9569i   0.9808 - 0.1951i   0.0980 +
0.9952i
  1.0000 - 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
```

```
 -0.9239 - 0.3827i   0.2903 - 0.9569i   0.9808 + 0.1951i  -0.0980 +
0.9952i
  0.7071 + 0.7071i  -0.5556 + 0.8315i  -0.9239 - 0.3827i   0.1951 -
0.9808i
 -0.3827 - 0.9239i   0.7730 - 0.6344i   0.8315 + 0.5556i  -0.2903 +
0.9569i
 -0.0000 + 1.0000i  -0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 -
0.9239i
  0.3827 - 0.9239i   0.9952 - 0.0980i   0.5556 + 0.8315i  -0.4714 +
0.8819i
 -0.7071 + 0.7071i  -0.9808 - 0.1951i  -0.3827 - 0.9239i   0.5556 -
0.8315i
  0.9239 - 0.3827i   0.8819 + 0.4714i   0.1951 + 0.9808i  -0.6344 +
0.7730i
 -1.0000 - 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
  0.9239 + 0.3827i   0.4714 + 0.8819i  -0.1951 + 0.9808i  -0.7730 +
0.6344i
 -0.7071 - 0.7071i  -0.1951 - 0.9808i   0.3827 - 0.9239i   0.8315 -
0.5556i
  0.3827 + 0.9239i  -0.0980 + 0.9952i  -0.5556 + 0.8315i  -0.8819 +
0.4714i
 -0.0000 - 1.0000i   0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 -
0.3827i
 -0.3827 + 0.9239i  -0.6344 + 0.7730i  -0.8315 + 0.5556i  -0.9569 +
0.2903i
  0.7071 - 0.7071i   0.8315 - 0.5556i   0.9239 - 0.3827i   0.9808 -
0.1951i
 -0.9239 + 0.3827i  -0.9569 + 0.2903i  -0.9808 + 0.1951i  -0.9952 +
0.0980i

 Columns 33 through 36

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -1.0000 - 0.0000i  -0.9952 + 0.0980i  -0.9808 + 0.1951i  -0.9569 +
0.2903i
  1.0000 + 0.0000i   0.9808 - 0.1951i   0.9239 - 0.3827i   0.8315 -
0.5556i
 -1.0000 - 0.0000i  -0.9569 + 0.2903i  -0.8315 + 0.5556i  -0.6344 +
0.7730i
  1.0000 + 0.0000i   0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 -
0.9239i
 -1.0000 - 0.0000i  -0.8819 + 0.4714i  -0.5556 + 0.8315i  -0.0980 +
0.9952i
  1.0000 + 0.0000i   0.8315 - 0.5556i   0.3827 - 0.9239i  -0.1951 -
0.9808i
 -1.0000 - 0.0000i  -0.7730 + 0.6344i  -0.1951 + 0.9808i   0.4714 +
0.8819i
  1.0000 + 0.0000i   0.7071 - 0.7071i  -0.0000 - 1.0000i  -0.7071 -
0.7071i
 -1.0000 - 0.0000i  -0.6344 + 0.7730i   0.1951 + 0.9808i   0.8819 +
0.4714i
```

```
  1.0000 + 0.0000i   0.5556 - 0.8315i  -0.3827 - 0.9239i  -0.9808 -
0.1951i
 -1.0000 - 0.0000i  -0.4714 + 0.8819i   0.5556 + 0.8315i   0.9952 -
0.0980i
  1.0000 + 0.0000i   0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 +
0.3827i
 -1.0000 + 0.0000i  -0.2903 + 0.9569i   0.8315 + 0.5556i   0.7730 -
0.6344i
  1.0000 + 0.0000i   0.1951 - 0.9808i  -0.9239 - 0.3827i  -0.5556 +
0.8315i
 -1.0000 - 0.0000i  -0.0980 + 0.9952i   0.9808 + 0.1951i   0.2903 -
0.9569i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 + 0.0000i  -0.0000 +
1.0000i
 -1.0000 + 0.0000i   0.0980 + 0.9952i   0.9808 - 0.1951i  -0.2903 -
0.9569i
  1.0000 + 0.0000i  -0.1951 - 0.9808i  -0.9239 + 0.3827i   0.5556 +
0.8315i
 -1.0000 - 0.0000i   0.2903 + 0.9569i   0.8315 - 0.5556i  -0.7730 -
0.6344i
  1.0000 + 0.0000i  -0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 +
0.3827i
 -1.0000 + 0.0000i   0.4714 + 0.8819i   0.5556 - 0.8315i  -0.9952 -
0.0980i
  1.0000 + 0.0000i  -0.5556 - 0.8315i  -0.3827 + 0.9239i   0.9808 -
0.1951i
 -1.0000 - 0.0000i   0.6344 + 0.7730i   0.1951 - 0.9808i  -0.8819 +
0.4714i
  1.0000 + 0.0000i  -0.7071 - 0.7071i   0.0000 + 1.0000i   0.7071 -
0.7071i
 -1.0000 + 0.0000i   0.7730 + 0.6344i  -0.1951 - 0.9808i  -0.4714 +
0.8819i
  1.0000 - 0.0000i  -0.8315 - 0.5556i   0.3827 + 0.9239i   0.1951 -
0.9808i
 -1.0000 - 0.0000i   0.8819 + 0.4714i  -0.5556 - 0.8315i   0.0980 +
0.9952i
  1.0000 + 0.0000i  -0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 -
0.9239i
 -1.0000 + 0.0000i   0.9569 + 0.2903i  -0.8315 - 0.5556i   0.6344 +
0.7730i
  1.0000 + 0.0000i  -0.9808 - 0.1951i   0.9239 + 0.3827i  -0.8315 -
0.5556i
 -1.0000 - 0.0000i   0.9952 + 0.0980i  -0.9808 - 0.1951i   0.9569 +
0.2903i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 - 0.0000i  -1.0000 -
0.0000i
 -1.0000 - 0.0000i   0.9952 - 0.0980i  -0.9808 + 0.1951i   0.9569 -
0.2903i
  1.0000 - 0.0000i  -0.9808 + 0.1951i   0.9239 - 0.3827i  -0.8315 +
0.5556i
 -1.0000 - 0.0000i   0.9569 - 0.2903i  -0.8315 + 0.5556i   0.6344 -
0.7730i
  1.0000 + 0.0000i  -0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 +
0.9239i
```

```
 -1.0000 - 0.0000i   0.8819 - 0.4714i  -0.5556 + 0.8315i   0.0980 -
0.9952i
  1.0000 + 0.0000i  -0.8315 + 0.5556i   0.3827 - 0.9239i   0.1951 +
0.9808i
 -1.0000 - 0.0000i   0.7730 - 0.6344i  -0.1951 + 0.9808i  -0.4714 -
0.8819i
  1.0000 + 0.0000i  -0.7071 + 0.7071i   0.0000 - 1.0000i   0.7071 +
0.7071i
 -1.0000 - 0.0000i   0.6344 - 0.7730i   0.1951 + 0.9808i  -0.8819 -
0.4714i
  1.0000 - 0.0000i  -0.5556 + 0.8315i  -0.3827 - 0.9239i   0.9808 +
0.1951i
 -1.0000 - 0.0000i   0.4714 - 0.8819i   0.5556 + 0.8315i  -0.9952 +
0.0980i
  1.0000 + 0.0000i  -0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 -
0.3827i
 -1.0000 - 0.0000i   0.2903 - 0.9569i   0.8315 + 0.5556i  -0.7730 +
0.6344i
  1.0000 + 0.0000i  -0.1951 + 0.9808i  -0.9239 - 0.3827i   0.5556 -
0.8315i
 -1.0000 + 0.0000i   0.0980 - 0.9952i   0.9808 + 0.1951i  -0.2903 +
0.9569i
  1.0000 + 0.0000i   0.0000 + 1.0000i  -1.0000 + 0.0000i  -0.0000 -
1.0000i
 -1.0000 - 0.0000i  -0.0980 - 0.9952i   0.9808 - 0.1951i   0.2903 +
0.9569i
  1.0000 - 0.0000i   0.1951 + 0.9808i  -0.9239 + 0.3827i  -0.5556 -
0.8315i
 -1.0000 - 0.0000i  -0.2903 - 0.9569i   0.8315 - 0.5556i   0.7730 +
0.6344i
  1.0000 - 0.0000i   0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 -
0.3827i
 -1.0000 - 0.0000i  -0.4714 - 0.8819i   0.5556 - 0.8315i   0.9952 +
0.0980i
  1.0000 + 0.0000i   0.5556 + 0.8315i  -0.3827 + 0.9239i  -0.9808 +
0.1951i
 -1.0000 + 0.0000i  -0.6344 - 0.7730i   0.1951 - 0.9808i   0.8819 -
0.4714i
  1.0000 + 0.0000i   0.7071 + 0.7071i   0.0000 + 1.0000i  -0.7071 +
0.7071i
 -1.0000 - 0.0000i  -0.7730 - 0.6344i  -0.1951 - 0.9808i   0.4714 -
0.8819i
  1.0000 - 0.0000i   0.8315 + 0.5556i   0.3827 + 0.9239i  -0.1951 +
0.9808i
 -1.0000 - 0.0000i  -0.8819 - 0.4714i  -0.5556 - 0.8315i  -0.0980 -
0.9952i
  1.0000 + 0.0000i   0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 +
0.9239i
 -1.0000 - 0.0000i  -0.9569 - 0.2903i  -0.8315 - 0.5556i  -0.6344 -
0.7730i
  1.0000 + 0.0000i   0.9808 + 0.1951i   0.9239 + 0.3827i   0.8315 +
0.5556i
 -1.0000 + 0.0000i  -0.9952 - 0.0980i  -0.9808 - 0.1951i  -0.9569 -
0.2903i
```

```
 Columns 37 through 40

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -0.9239 + 0.3827i  -0.8819 + 0.4714i  -0.8315 + 0.5556i  -0.7730 +
0.6344i
  0.7071 - 0.7071i   0.5556 - 0.8315i   0.3827 - 0.9239i   0.1951 -
0.9808i
 -0.3827 + 0.9239i  -0.0980 + 0.9952i   0.1951 + 0.9808i   0.4714 +
0.8819i
  0.0000 - 1.0000i  -0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 -
0.3827i
  0.3827 + 0.9239i   0.7730 + 0.6344i   0.9808 + 0.1951i   0.9569 -
0.2903i
 -0.7071 - 0.7071i  -0.9808 - 0.1951i  -0.9239 + 0.3827i  -0.5556 +
0.8315i
  0.9239 + 0.3827i   0.9569 - 0.2903i   0.5556 - 0.8315i  -0.0980 -
0.9952i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
  0.9239 - 0.3827i   0.2903 - 0.9569i  -0.5556 - 0.8315i  -0.9952 -
0.0980i
 -0.7071 + 0.7071i   0.1951 + 0.9808i   0.9239 + 0.3827i   0.8315 -
0.5556i
  0.3827 - 0.9239i  -0.6344 - 0.7730i  -0.9808 + 0.1951i  -0.2903 +
0.9569i
 -0.0000 + 1.0000i   0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 -
0.9239i
 -0.3827 - 0.9239i  -0.9952 + 0.0980i  -0.1951 + 0.9808i   0.8819 +
0.4714i
  0.7071 + 0.7071i   0.8315 - 0.5556i  -0.3827 - 0.9239i  -0.9808 +
0.1951i
 -0.9239 - 0.3827i  -0.4714 + 0.8819i   0.8315 + 0.5556i   0.6344 -
0.7730i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i  -0.0000 +
1.0000i
 -0.9239 + 0.3827i   0.4714 + 0.8819i   0.8315 - 0.5556i  -0.6344 -
0.7730i
  0.7071 - 0.7071i  -0.8315 - 0.5556i  -0.3827 + 0.9239i   0.9808 +
0.1951i
 -0.3827 + 0.9239i   0.9952 + 0.0980i  -0.1951 - 0.9808i  -0.8819 +
0.4714i
  0.0000 - 1.0000i  -0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 -
0.9239i
  0.3827 + 0.9239i   0.6344 - 0.7730i  -0.9808 - 0.1951i   0.2903 +
0.9569i
 -0.7071 - 0.7071i  -0.1951 + 0.9808i   0.9239 - 0.3827i  -0.8315 -
0.5556i
  0.9239 + 0.3827i  -0.2903 - 0.9569i  -0.5556 + 0.8315i   0.9952 -
0.0980i
 -1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
```

```
  0.9239 - 0.3827i  -0.9569 - 0.2903i   0.5556 + 0.8315i   0.0980 -
0.9952i
 -0.7071 + 0.7071i   0.9808 - 0.1951i  -0.9239 - 0.3827i   0.5556 +
0.8315i
  0.3827 - 0.9239i  -0.7730 + 0.6344i   0.9808 - 0.1951i  -0.9569 -
0.2903i
  0.0000 + 1.0000i   0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 -
0.3827i
 -0.3827 - 0.9239i   0.0980 + 0.9952i   0.1951 - 0.9808i  -0.4714 +
0.8819i
  0.7071 + 0.7071i  -0.5556 - 0.8315i   0.3827 + 0.9239i  -0.1951 -
0.9808i
 -0.9239 - 0.3827i   0.8819 + 0.4714i  -0.8315 - 0.5556i   0.7730 +
0.6344i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 -
0.0000i
 -0.9239 + 0.3827i   0.8819 - 0.4714i  -0.8315 + 0.5556i   0.7730 -
0.6344i
  0.7071 - 0.7071i  -0.5556 + 0.8315i   0.3827 - 0.9239i  -0.1951 +
0.9808i
 -0.3827 + 0.9239i   0.0980 - 0.9952i   0.1951 + 0.9808i  -0.4714 -
0.8819i
  0.0000 - 1.0000i   0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 +
0.3827i
  0.3827 + 0.9239i  -0.7730 - 0.6344i   0.9808 + 0.1951i  -0.9569 +
0.2903i
 -0.7071 - 0.7071i   0.9808 + 0.1951i  -0.9239 + 0.3827i   0.5556 -
0.8315i
  0.9239 + 0.3827i  -0.9569 + 0.2903i   0.5556 - 0.8315i   0.0980 +
0.9952i
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
  0.9239 - 0.3827i  -0.2903 + 0.9569i  -0.5556 - 0.8315i   0.9952 +
0.0980i
 -0.7071 + 0.7071i  -0.1951 - 0.9808i   0.9239 + 0.3827i  -0.8315 +
0.5556i
  0.3827 - 0.9239i   0.6344 + 0.7730i  -0.9808 + 0.1951i   0.2903 -
0.9569i
  0.0000 + 1.0000i  -0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 +
0.9239i
 -0.3827 - 0.9239i   0.9952 - 0.0980i  -0.1951 + 0.9808i  -0.8819 -
0.4714i
  0.7071 + 0.7071i  -0.8315 + 0.5556i  -0.3827 - 0.9239i   0.9808 -
0.1951i
 -0.9239 - 0.3827i   0.4714 - 0.8819i   0.8315 + 0.5556i  -0.6344 +
0.7730i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
 -0.9239 + 0.3827i  -0.4714 - 0.8819i   0.8315 - 0.5556i   0.6344 +
0.7730i
  0.7071 - 0.7071i   0.8315 + 0.5556i  -0.3827 + 0.9239i  -0.9808 -
0.1951i
 -0.3827 + 0.9239i  -0.9952 - 0.0980i  -0.1951 - 0.9808i   0.8819 -
0.4714i
```

```
  0.0000 - 1.0000i   0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 +
0.9239i
  0.3827 + 0.9239i  -0.6344 + 0.7730i  -0.9808 - 0.1951i  -0.2903 -
0.9569i
 -0.7071 - 0.7071i   0.1951 - 0.9808i   0.9239 - 0.3827i   0.8315 +
0.5556i
  0.9239 + 0.3827i   0.2903 + 0.9569i  -0.5556 + 0.8315i  -0.9952 +
0.0980i
 -1.0000 + 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
  0.9239 - 0.3827i   0.9569 + 0.2903i   0.5556 + 0.8315i  -0.0980 +
0.9952i
 -0.7071 + 0.7071i  -0.9808 + 0.1951i  -0.9239 - 0.3827i  -0.5556 -
0.8315i
  0.3827 - 0.9239i   0.7730 - 0.6344i   0.9808 - 0.1951i   0.9569 +
0.2903i
 -0.0000 + 1.0000i  -0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 +
0.3827i
 -0.3827 - 0.9239i  -0.0980 - 0.9952i   0.1951 - 0.9808i   0.4714 -
0.8819i
  0.7071 + 0.7071i   0.5556 + 0.8315i   0.3827 + 0.9239i   0.1951 +
0.9808i
 -0.9239 - 0.3827i  -0.8819 - 0.4714i  -0.8315 - 0.5556i  -0.7730 -
0.6344i

 Columns 41 through 44

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -0.7071 + 0.7071i  -0.6344 + 0.7730i  -0.5556 + 0.8315i  -0.4714 +
0.8819i
  0.0000 - 1.0000i  -0.1951 - 0.9808i  -0.3827 - 0.9239i  -0.5556 -
0.8315i
  0.7071 + 0.7071i   0.8819 + 0.4714i   0.9808 + 0.1951i   0.9952 -
0.0980i
 -1.0000 - 0.0000i  -0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 +
0.9239i
  0.7071 - 0.7071i   0.2903 - 0.9569i  -0.1951 - 0.9808i  -0.6344 -
0.7730i
 -0.0000 + 1.0000i   0.5556 + 0.8315i   0.9239 + 0.3827i   0.9808 -
0.1951i
 -0.7071 - 0.7071i  -0.9952 - 0.0980i  -0.8315 + 0.5556i  -0.2903 +
0.9569i
  1.0000 + 0.0000i   0.7071 - 0.7071i  -0.0000 - 1.0000i  -0.7071 -
0.7071i
 -0.7071 + 0.7071i   0.0980 + 0.9952i   0.8315 + 0.5556i   0.9569 -
0.2903i
 -0.0000 - 1.0000i  -0.8315 - 0.5556i  -0.9239 + 0.3827i  -0.1951 +
0.9808i
  0.7071 + 0.7071i   0.9569 - 0.2903i   0.1951 - 0.9808i  -0.7730 -
0.6344i
 -1.0000 - 0.0000i  -0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 -
0.3827i
```

```
  0.7071 - 0.7071i  -0.4714 - 0.8819i  -0.9808 + 0.1951i  -0.0980 +
0.9952i
 -0.0000 + 1.0000i   0.9808 + 0.1951i   0.3827 - 0.9239i  -0.8315 -
0.5556i
 -0.7071 - 0.7071i  -0.7730 + 0.6344i   0.5556 + 0.8315i   0.8819 -
0.4714i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 + 0.0000i  -0.0000 +
1.0000i
 -0.7071 + 0.7071i   0.7730 + 0.6344i   0.5556 - 0.8315i  -0.8819 -
0.4714i
  0.0000 - 1.0000i  -0.9808 + 0.1951i   0.3827 + 0.9239i   0.8315 -
0.5556i
  0.7071 + 0.7071i   0.4714 - 0.8819i  -0.9808 - 0.1951i   0.0980 +
0.9952i
 -1.0000 + 0.0000i   0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 -
0.3827i
  0.7071 - 0.7071i  -0.9569 - 0.2903i   0.1951 + 0.9808i   0.7730 -
0.6344i
  0.0000 + 1.0000i   0.8315 - 0.5556i  -0.9239 - 0.3827i   0.1951 +
0.9808i
 -0.7071 - 0.7071i  -0.0980 + 0.9952i   0.8315 - 0.5556i  -0.9569 -
0.2903i
  1.0000 + 0.0000i  -0.7071 - 0.7071i   0.0000 + 1.0000i   0.7071 -
0.7071i
 -0.7071 + 0.7071i   0.9952 - 0.0980i  -0.8315 - 0.5556i   0.2903 +
0.9569i
  0.0000 - 1.0000i  -0.5556 + 0.8315i   0.9239 - 0.3827i  -0.9808 -
0.1951i
  0.7071 + 0.7071i  -0.2903 - 0.9569i  -0.1951 + 0.9808i   0.6344 -
0.7730i
 -1.0000 - 0.0000i   0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 +
0.9239i
  0.7071 - 0.7071i  -0.8819 + 0.4714i   0.9808 - 0.1951i  -0.9952 -
0.0980i
 -0.0000 + 1.0000i   0.1951 - 0.9808i  -0.3827 + 0.9239i   0.5556 -
0.8315i
 -0.7071 - 0.7071i   0.6344 + 0.7730i  -0.5556 - 0.8315i   0.4714 +
0.8819i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 - 0.0000i  -1.0000 -
0.0000i
 -0.7071 + 0.7071i   0.6344 - 0.7730i  -0.5556 + 0.8315i   0.4714 -
0.8819i
  0.0000 - 1.0000i   0.1951 + 0.9808i  -0.3827 - 0.9239i   0.5556 +
0.8315i
  0.7071 + 0.7071i  -0.8819 - 0.4714i   0.9808 + 0.1951i  -0.9952 +
0.0980i
 -1.0000 - 0.0000i   0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 -
0.9239i
  0.7071 - 0.7071i  -0.2903 + 0.9569i  -0.1951 - 0.9808i   0.6344 +
0.7730i
 -0.0000 + 1.0000i  -0.5556 - 0.8315i   0.9239 + 0.3827i  -0.9808 +
0.1951i
 -0.7071 - 0.7071i   0.9952 + 0.0980i  -0.8315 + 0.5556i   0.2903 -
0.9569i
```

```
  1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 - 1.0000i   0.7071 +
0.7071i
 -0.7071 + 0.7071i  -0.0980 - 0.9952i   0.8315 + 0.5556i  -0.9569 +
0.2903i
 -0.0000 - 1.0000i   0.8315 + 0.5556i  -0.9239 + 0.3827i   0.1951 -
0.9808i
  0.7071 + 0.7071i  -0.9569 + 0.2903i   0.1951 - 0.9808i   0.7730 +
0.6344i
 -1.0000 + 0.0000i   0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 +
0.3827i
  0.7071 - 0.7071i   0.4714 + 0.8819i  -0.9808 + 0.1951i   0.0980 -
0.9952i
  0.0000 + 1.0000i  -0.9808 - 0.1951i   0.3827 - 0.9239i   0.8315 +
0.5556i
 -0.7071 - 0.7071i   0.7730 - 0.6344i   0.5556 + 0.8315i  -0.8819 +
0.4714i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 + 0.0000i   0.0000 -
1.0000i
 -0.7071 + 0.7071i  -0.7730 - 0.6344i   0.5556 - 0.8315i   0.8819 +
0.4714i
  0.0000 - 1.0000i   0.9808 - 0.1951i   0.3827 + 0.9239i  -0.8315 +
0.5556i
  0.7071 + 0.7071i  -0.4714 + 0.8819i  -0.9808 - 0.1951i  -0.0980 -
0.9952i
 -1.0000 - 0.0000i  -0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 +
0.3827i
  0.7071 - 0.7071i   0.9569 + 0.2903i   0.1951 + 0.9808i  -0.7730 +
0.6344i
 -0.0000 + 1.0000i  -0.8315 + 0.5556i  -0.9239 - 0.3827i  -0.1951 -
0.9808i
 -0.7071 - 0.7071i   0.0980 - 0.9952i   0.8315 - 0.5556i   0.9569 +
0.2903i
  1.0000 + 0.0000i   0.7071 + 0.7071i   0.0000 + 1.0000i  -0.7071 +
0.7071i
 -0.7071 + 0.7071i  -0.9952 + 0.0980i  -0.8315 - 0.5556i  -0.2903 -
0.9569i
  0.0000 - 1.0000i   0.5556 - 0.8315i   0.9239 - 0.3827i   0.9808 +
0.1951i
  0.7071 + 0.7071i   0.2903 + 0.9569i  -0.1951 + 0.9808i  -0.6344 +
0.7730i
 -1.0000 - 0.0000i  -0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 -
0.9239i
  0.7071 - 0.7071i   0.8819 - 0.4714i   0.9808 - 0.1951i   0.9952 +
0.0980i
 -0.0000 + 1.0000i  -0.1951 + 0.9808i  -0.3827 + 0.9239i  -0.5556 +
0.8315i
 -0.7071 - 0.7071i  -0.6344 - 0.7730i  -0.5556 - 0.8315i  -0.4714 -
0.8819i

 Columns 45 through 48

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
```

```
 -0.3827 + 0.9239i  -0.2903 + 0.9569i  -0.1951 + 0.9808i  -0.0980 +
0.9952i
 -0.7071 - 0.7071i  -0.8315 - 0.5556i  -0.9239 - 0.3827i  -0.9808 -
0.1951i
  0.9239 - 0.3827i   0.7730 - 0.6344i   0.5556 - 0.8315i   0.2903 -
0.9569i
 -0.0000 + 1.0000i   0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 +
0.3827i
 -0.9239 - 0.3827i  -0.9952 + 0.0980i  -0.8315 + 0.5556i  -0.4714 +
0.8819i
  0.7071 - 0.7071i   0.1951 - 0.9808i  -0.3827 - 0.9239i  -0.8315 -
0.5556i
  0.3827 + 0.9239i   0.8819 + 0.4714i   0.9808 - 0.1951i   0.6344 -
0.7730i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
  0.3827 - 0.9239i  -0.4714 - 0.8819i  -0.9808 - 0.1951i  -0.7730 +
0.6344i
  0.7071 + 0.7071i   0.9808 - 0.1951i   0.3827 - 0.9239i  -0.5556 -
0.8315i
 -0.9239 + 0.3827i  -0.0980 + 0.9952i   0.8315 + 0.5556i   0.8819 -
0.4714i
  0.0000 - 1.0000i  -0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 +
0.9239i
  0.9239 + 0.3827i   0.6344 - 0.7730i  -0.5556 - 0.8315i  -0.9569 +
0.2903i
 -0.7071 + 0.7071i   0.5556 + 0.8315i   0.9239 - 0.3827i  -0.1951 -
0.9808i
 -0.3827 - 0.9239i  -0.9569 + 0.2903i   0.1951 + 0.9808i   0.9952 -
0.0980i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i   0.0000 +
1.0000i
 -0.3827 + 0.9239i   0.9569 + 0.2903i   0.1951 - 0.9808i  -0.9952 -
0.0980i
 -0.7071 - 0.7071i  -0.5556 + 0.8315i   0.9239 + 0.3827i   0.1951 -
0.9808i
  0.9239 - 0.3827i  -0.6344 - 0.7730i  -0.5556 + 0.8315i   0.9569 +
0.2903i
 -0.0000 + 1.0000i   0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 +
0.9239i
 -0.9239 - 0.3827i   0.0980 + 0.9952i   0.8315 - 0.5556i  -0.8819 -
0.4714i
  0.7071 - 0.7071i  -0.9808 - 0.1951i   0.3827 + 0.9239i   0.5556 -
0.8315i
  0.3827 + 0.9239i   0.4714 - 0.8819i  -0.9808 + 0.1951i   0.7730 +
0.6344i
 -1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
  0.3827 - 0.9239i  -0.8819 + 0.4714i   0.9808 + 0.1951i  -0.6344 -
0.7730i
  0.7071 + 0.7071i  -0.1951 - 0.9808i  -0.3827 + 0.9239i   0.8315 -
0.5556i
 -0.9239 + 0.3827i   0.9952 + 0.0980i  -0.8315 - 0.5556i   0.4714 +
0.8819i
```

```
  0.0000 - 1.0000i  -0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 +
0.3827i
  0.9239 + 0.3827i  -0.7730 - 0.6344i   0.5556 + 0.8315i  -0.2903 -
0.9569i
 -0.7071 + 0.7071i   0.8315 - 0.5556i  -0.9239 + 0.3827i   0.9808 -
0.1951i
 -0.3827 - 0.9239i   0.2903 + 0.9569i  -0.1951 - 0.9808i   0.0980 +
0.9952i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 +
0.0000i
 -0.3827 + 0.9239i   0.2903 - 0.9569i  -0.1951 + 0.9808i   0.0980 -
0.9952i
 -0.7071 - 0.7071i   0.8315 + 0.5556i  -0.9239 - 0.3827i   0.9808 +
0.1951i
  0.9239 - 0.3827i  -0.7730 + 0.6344i   0.5556 - 0.8315i  -0.2903 +
0.9569i
 -0.0000 + 1.0000i  -0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 -
0.3827i
 -0.9239 - 0.3827i   0.9952 - 0.0980i  -0.8315 + 0.5556i   0.4714 -
0.8819i
  0.7071 - 0.7071i  -0.1951 + 0.9808i  -0.3827 - 0.9239i   0.8315 +
0.5556i
  0.3827 + 0.9239i  -0.8819 - 0.4714i   0.9808 - 0.1951i  -0.6344 +
0.7730i
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
  0.3827 - 0.9239i   0.4714 + 0.8819i  -0.9808 - 0.1951i   0.7730 -
0.6344i
  0.7071 + 0.7071i  -0.9808 + 0.1951i   0.3827 - 0.9239i   0.5556 +
0.8315i
 -0.9239 + 0.3827i   0.0980 - 0.9952i   0.8315 + 0.5556i  -0.8819 +
0.4714i
  0.0000 - 1.0000i   0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 -
0.9239i
  0.9239 + 0.3827i  -0.6344 + 0.7730i  -0.5556 - 0.8315i   0.9569 -
0.2903i
 -0.7071 + 0.7071i  -0.5556 - 0.8315i   0.9239 - 0.3827i   0.1951 +
0.9808i
 -0.3827 - 0.9239i   0.9569 - 0.2903i   0.1951 + 0.9808i  -0.9952 +
0.0980i
  1.0000 + 0.0000i   0.0000 + 1.0000i  -1.0000 - 0.0000i  -0.0000 -
1.0000i
 -0.3827 + 0.9239i  -0.9569 - 0.2903i   0.1951 - 0.9808i   0.9952 +
0.0980i
 -0.7071 - 0.7071i   0.5556 - 0.8315i   0.9239 + 0.3827i  -0.1951 +
0.9808i
  0.9239 - 0.3827i   0.6344 + 0.7730i  -0.5556 + 0.8315i  -0.9569 -
0.2903i
 -0.0000 + 1.0000i  -0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 -
0.9239i
 -0.9239 - 0.3827i  -0.0980 - 0.9952i   0.8315 - 0.5556i   0.8819 +
0.4714i
  0.7071 - 0.7071i   0.9808 + 0.1951i   0.3827 + 0.9239i  -0.5556 +
0.8315i
```

```
  0.3827 + 0.9239i  -0.4714 + 0.8819i  -0.9808 + 0.1951i  -0.7730 -
0.6344i
 -1.0000 - 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
  0.3827 - 0.9239i   0.8819 - 0.4714i   0.9808 + 0.1951i   0.6344 +
0.7730i
  0.7071 + 0.7071i   0.1951 + 0.9808i  -0.3827 + 0.9239i  -0.8315 +
0.5556i
 -0.9239 + 0.3827i  -0.9952 - 0.0980i  -0.8315 - 0.5556i  -0.4714 -
0.8819i
  0.0000 - 1.0000i   0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 -
0.3827i
  0.9239 + 0.3827i   0.7730 + 0.6344i   0.5556 + 0.8315i   0.2903 +
0.9569i
 -0.7071 + 0.7071i  -0.8315 + 0.5556i  -0.9239 + 0.3827i  -0.9808 +
0.1951i
 -0.3827 - 0.9239i  -0.2903 - 0.9569i  -0.1951 - 0.9808i  -0.0980 -
0.9952i

 Columns 49 through 52

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
 -0.0000 + 1.0000i   0.0980 + 0.9952i   0.1951 + 0.9808i   0.2903 +
0.9569i
 -1.0000 - 0.0000i  -0.9808 + 0.1951i  -0.9239 + 0.3827i  -0.8315 +
0.5556i
  0.0000 - 1.0000i  -0.2903 - 0.9569i  -0.5556 - 0.8315i  -0.7730 -
0.6344i
  1.0000 + 0.0000i   0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 -
0.9239i
 -0.0000 + 1.0000i   0.4714 + 0.8819i   0.8315 + 0.5556i   0.9952 +
0.0980i
 -1.0000 - 0.0000i  -0.8315 + 0.5556i  -0.3827 + 0.9239i   0.1951 +
0.9808i
 -0.0000 - 1.0000i  -0.6344 - 0.7730i  -0.9808 - 0.1951i  -0.8819 +
0.4714i
  1.0000 + 0.0000i   0.7071 - 0.7071i  -0.0000 - 1.0000i  -0.7071 -
0.7071i
 -0.0000 + 1.0000i   0.7730 + 0.6344i   0.9808 - 0.1951i   0.4714 -
0.8819i
 -1.0000 - 0.0000i  -0.5556 + 0.8315i   0.3827 + 0.9239i   0.9808 +
0.1951i
  0.0000 - 1.0000i  -0.8819 - 0.4714i  -0.8315 + 0.5556i   0.0980 +
0.9952i
  1.0000 + 0.0000i   0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 +
0.3827i
 -0.0000 + 1.0000i   0.9569 + 0.2903i   0.5556 - 0.8315i  -0.6344 -
0.7730i
 -1.0000 + 0.0000i  -0.1951 + 0.9808i   0.9239 + 0.3827i   0.5556 -
0.8315i
  0.0000 - 1.0000i  -0.9952 - 0.0980i  -0.1951 + 0.9808i   0.9569 +
0.2903i
```

```
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 + 0.0000i  -0.0000 +
1.0000i
 -0.0000 + 1.0000i   0.9952 - 0.0980i  -0.1951 - 0.9808i  -0.9569 +
0.2903i
 -1.0000 - 0.0000i   0.1951 + 0.9808i   0.9239 - 0.3827i  -0.5556 -
0.8315i
  0.0000 - 1.0000i  -0.9569 + 0.2903i   0.5556 + 0.8315i   0.6344 -
0.7730i
  1.0000 + 0.0000i  -0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 +
0.3827i
  0.0000 + 1.0000i   0.8819 - 0.4714i  -0.8315 - 0.5556i  -0.0980 +
0.9952i
 -1.0000 - 0.0000i   0.5556 + 0.8315i   0.3827 - 0.9239i  -0.9808 +
0.1951i
  0.0000 - 1.0000i  -0.7730 + 0.6344i   0.9808 + 0.1951i  -0.4714 -
0.8819i
  1.0000 + 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
0.7071i
 -0.0000 + 1.0000i   0.6344 - 0.7730i  -0.9808 + 0.1951i   0.8819 +
0.4714i
 -1.0000 - 0.0000i   0.8315 + 0.5556i  -0.3827 - 0.9239i  -0.1951 +
0.9808i
  0.0000 - 1.0000i  -0.4714 + 0.8819i   0.8315 - 0.5556i  -0.9952 +
0.0980i
  1.0000 - 0.0000i  -0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 -
0.9239i
 -0.0000 + 1.0000i   0.2903 - 0.9569i  -0.5556 + 0.8315i   0.7730 -
0.6344i
 -1.0000 - 0.0000i   0.9808 + 0.1951i  -0.9239 - 0.3827i   0.8315 +
0.5556i
  0.0000 - 1.0000i  -0.0980 + 0.9952i   0.1951 - 0.9808i  -0.2903 +
0.9569i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 - 0.0000i  -1.0000 -
0.0000i
  0.0000 + 1.0000i  -0.0980 - 0.9952i   0.1951 + 0.9808i  -0.2903 -
0.9569i
 -1.0000 - 0.0000i   0.9808 - 0.1951i  -0.9239 + 0.3827i   0.8315 -
0.5556i
 -0.0000 - 1.0000i   0.2903 + 0.9569i  -0.5556 - 0.8315i   0.7730 +
0.6344i
  1.0000 + 0.0000i  -0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 +
0.9239i
 -0.0000 + 1.0000i  -0.4714 - 0.8819i   0.8315 + 0.5556i  -0.9952 -
0.0980i
 -1.0000 - 0.0000i   0.8315 - 0.5556i  -0.3827 + 0.9239i  -0.1951 -
0.9808i
  0.0000 - 1.0000i   0.6344 + 0.7730i  -0.9808 - 0.1951i   0.8819 -
0.4714i
  1.0000 + 0.0000i  -0.7071 + 0.7071i  -0.0000 - 1.0000i   0.7071 +
0.7071i
 -0.0000 + 1.0000i  -0.7730 - 0.6344i   0.9808 - 0.1951i  -0.4714 +
0.8819i
 -1.0000 + 0.0000i   0.5556 - 0.8315i   0.3827 + 0.9239i  -0.9808 -
0.1951i
```

```
  0.0000 - 1.0000i   0.8819 + 0.4714i  -0.8315 + 0.5556i  -0.0980 -
0.9952i
  1.0000 + 0.0000i  -0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 -
0.3827i
 -0.0000 + 1.0000i  -0.9569 - 0.2903i   0.5556 - 0.8315i   0.6344 +
0.7730i
 -1.0000 - 0.0000i   0.1951 - 0.9808i   0.9239 + 0.3827i  -0.5556 +
0.8315i
  0.0000 - 1.0000i   0.9952 + 0.0980i  -0.1951 + 0.9808i  -0.9569 -
0.2903i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i   0.0000 -
1.0000i
  0.0000 + 1.0000i  -0.9952 + 0.0980i  -0.1951 - 0.9808i   0.9569 -
0.2903i
 -1.0000 - 0.0000i  -0.1951 - 0.9808i   0.9239 - 0.3827i   0.5556 +
0.8315i
  0.0000 - 1.0000i   0.9569 - 0.2903i   0.5556 + 0.8315i  -0.6344 +
0.7730i
  1.0000 + 0.0000i   0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 -
0.3827i
 -0.0000 + 1.0000i  -0.8819 + 0.4714i  -0.8315 - 0.5556i   0.0980 -
0.9952i
 -1.0000 - 0.0000i  -0.5556 - 0.8315i   0.3827 - 0.9239i   0.9808 -
0.1951i
  0.0000 - 1.0000i   0.7730 - 0.6344i   0.9808 + 0.1951i   0.4714 +
0.8819i
  1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 + 1.0000i  -0.7071 +
0.7071i
 -0.0000 + 1.0000i  -0.6344 + 0.7730i  -0.9808 + 0.1951i  -0.8819 -
0.4714i
 -1.0000 - 0.0000i  -0.8315 - 0.5556i  -0.3827 - 0.9239i   0.1951 -
0.9808i
 -0.0000 - 1.0000i   0.4714 - 0.8819i   0.8315 - 0.5556i   0.9952 -
0.0980i
  1.0000 + 0.0000i   0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 +
0.9239i
 -0.0000 + 1.0000i  -0.2903 + 0.9569i  -0.5556 + 0.8315i  -0.7730 +
0.6344i
 -1.0000 - 0.0000i  -0.9808 - 0.1951i  -0.9239 - 0.3827i  -0.8315 -
0.5556i
 -0.0000 - 1.0000i   0.0980 - 0.9952i   0.1951 - 0.9808i   0.2903 -
0.9569i

 Columns 53 through 56

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  0.3827 + 0.9239i   0.4714 + 0.8819i   0.5556 + 0.8315i   0.6344 +
0.7730i
 -0.7071 + 0.7071i  -0.5556 + 0.8315i  -0.3827 + 0.9239i  -0.1951 +
0.9808i
 -0.9239 - 0.3827i  -0.9952 - 0.0980i  -0.9808 + 0.1951i  -0.8819 +
0.4714i
```

```
 -0.0000 - 1.0000i  -0.3827 - 0.9239i  -0.7071 - 0.7071i  -0.9239 -
0.3827i
  0.9239 - 0.3827i   0.6344 - 0.7730i   0.1951 - 0.9808i  -0.2903 -
0.9569i
  0.7071 + 0.7071i   0.9808 + 0.1951i   0.9239 - 0.3827i   0.5556 -
0.8315i
 -0.3827 + 0.9239i   0.2903 + 0.9569i   0.8315 + 0.5556i   0.9952 -
0.0980i
 -1.0000 + 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
 -0.3827 - 0.9239i  -0.9569 - 0.2903i  -0.8315 + 0.5556i  -0.0980 +
0.9952i
  0.7071 - 0.7071i  -0.1951 - 0.9808i  -0.9239 - 0.3827i  -0.8315 +
0.5556i
  0.9239 + 0.3827i   0.7730 - 0.6344i  -0.1951 - 0.9808i  -0.9569 -
0.2903i
  0.0000 + 1.0000i   0.9239 + 0.3827i   0.7071 - 0.7071i  -0.3827 -
0.9239i
 -0.9239 + 0.3827i   0.0980 + 0.9952i   0.9808 + 0.1951i   0.4714 -
0.8819i
 -0.7071 - 0.7071i  -0.8315 + 0.5556i   0.3827 + 0.9239i   0.9808 -
0.1951i
  0.3827 - 0.9239i  -0.8819 - 0.4714i  -0.5556 + 0.8315i   0.7730 +
0.6344i
  1.0000 - 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i   0.0000 +
1.0000i
  0.3827 + 0.9239i   0.8819 - 0.4714i  -0.5556 - 0.8315i  -0.7730 +
0.6344i
 -0.7071 + 0.7071i   0.8315 + 0.5556i   0.3827 - 0.9239i  -0.9808 -
0.1951i
 -0.9239 - 0.3827i  -0.0980 + 0.9952i   0.9808 - 0.1951i  -0.4714 -
0.8819i
 -0.0000 - 1.0000i  -0.9239 + 0.3827i   0.7071 + 0.7071i   0.3827 -
0.9239i
  0.9239 - 0.3827i  -0.7730 - 0.6344i  -0.1951 + 0.9808i   0.9569 -
0.2903i
  0.7071 + 0.7071i   0.1951 - 0.9808i  -0.9239 + 0.3827i   0.8315 +
0.5556i
 -0.3827 + 0.9239i   0.9569 - 0.2903i  -0.8315 - 0.5556i   0.0980 +
0.9952i
 -1.0000 + 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
 -0.3827 - 0.9239i  -0.2903 + 0.9569i   0.8315 - 0.5556i  -0.9952 -
0.0980i
  0.7071 - 0.7071i  -0.9808 + 0.1951i   0.9239 + 0.3827i  -0.5556 -
0.8315i
  0.9239 + 0.3827i  -0.6344 - 0.7730i   0.1951 + 0.9808i   0.2903 -
0.9569i
  0.0000 + 1.0000i   0.3827 - 0.9239i  -0.7071 + 0.7071i   0.9239 -
0.3827i
 -0.9239 + 0.3827i   0.9952 - 0.0980i  -0.9808 - 0.1951i   0.8819 +
0.4714i
 -0.7071 - 0.7071i   0.5556 + 0.8315i  -0.3827 - 0.9239i   0.1951 +
0.9808i
```

```
  0.3827 - 0.9239i  -0.4714 + 0.8819i   0.5556 - 0.8315i  -0.6344 +
0.7730i
  1.0000 - 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 +
0.0000i
  0.3827 + 0.9239i  -0.4714 - 0.8819i   0.5556 + 0.8315i  -0.6344 -
0.7730i
 -0.7071 + 0.7071i   0.5556 - 0.8315i  -0.3827 + 0.9239i   0.1951 -
0.9808i
 -0.9239 - 0.3827i   0.9952 + 0.0980i  -0.9808 + 0.1951i   0.8819 -
0.4714i
  0.0000 - 1.0000i   0.3827 + 0.9239i  -0.7071 - 0.7071i   0.9239 +
0.3827i
  0.9239 - 0.3827i  -0.6344 + 0.7730i   0.1951 - 0.9808i   0.2903 +
0.9569i
  0.7071 + 0.7071i  -0.9808 - 0.1951i   0.9239 - 0.3827i  -0.5556 +
0.8315i
 -0.3827 + 0.9239i  -0.2903 - 0.9569i   0.8315 + 0.5556i  -0.9952 +
0.0980i
 -1.0000 + 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
 -0.3827 - 0.9239i   0.9569 + 0.2903i  -0.8315 + 0.5556i   0.0980 -
0.9952i
  0.7071 - 0.7071i   0.1951 + 0.9808i  -0.9239 - 0.3827i   0.8315 -
0.5556i
  0.9239 + 0.3827i  -0.7730 + 0.6344i  -0.1951 - 0.9808i   0.9569 +
0.2903i
  0.0000 + 1.0000i  -0.9239 - 0.3827i   0.7071 - 0.7071i   0.3827 +
0.9239i
 -0.9239 + 0.3827i  -0.0980 - 0.9952i   0.9808 + 0.1951i  -0.4714 +
0.8819i
 -0.7071 - 0.7071i   0.8315 - 0.5556i   0.3827 + 0.9239i  -0.9808 +
0.1951i
  0.3827 - 0.9239i   0.8819 + 0.4714i  -0.5556 + 0.8315i  -0.7730 -
0.6344i
  1.0000 - 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i  -0.0000 -
1.0000i
  0.3827 + 0.9239i  -0.8819 + 0.4714i  -0.5556 - 0.8315i   0.7730 -
0.6344i
 -0.7071 + 0.7071i  -0.8315 - 0.5556i   0.3827 - 0.9239i   0.9808 +
0.1951i
 -0.9239 - 0.3827i   0.0980 - 0.9952i   0.9808 - 0.1951i   0.4714 +
0.8819i
  0.0000 - 1.0000i   0.9239 - 0.3827i   0.7071 + 0.7071i  -0.3827 +
0.9239i
  0.9239 - 0.3827i   0.7730 + 0.6344i  -0.1951 + 0.9808i  -0.9569 +
0.2903i
  0.7071 + 0.7071i  -0.1951 + 0.9808i  -0.9239 + 0.3827i  -0.8315 -
0.5556i
 -0.3827 + 0.9239i  -0.9569 + 0.2903i  -0.8315 - 0.5556i  -0.0980 -
0.9952i
 -1.0000 + 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
 -0.3827 - 0.9239i   0.2903 - 0.9569i   0.8315 - 0.5556i   0.9952 +
0.0980i
```

```
  0.7071 - 0.7071i   0.9808 - 0.1951i   0.9239 + 0.3827i   0.5556 +
0.8315i
  0.9239 + 0.3827i   0.6344 + 0.7730i   0.1951 + 0.9808i  -0.2903 +
0.9569i
  0.0000 + 1.0000i  -0.3827 + 0.9239i  -0.7071 + 0.7071i  -0.9239 +
0.3827i
 -0.9239 + 0.3827i  -0.9952 + 0.0980i  -0.9808 - 0.1951i  -0.8819 -
0.4714i
 -0.7071 - 0.7071i  -0.5556 - 0.8315i  -0.3827 - 0.9239i  -0.1951 -
0.9808i
  0.3827 - 0.9239i   0.4714 - 0.8819i   0.5556 - 0.8315i   0.6344 -
0.7730i

 Columns 57 through 60

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  0.7071 + 0.7071i   0.7730 + 0.6344i   0.8315 + 0.5556i   0.8819 +
0.4714i
 -0.0000 + 1.0000i   0.1951 + 0.9808i   0.3827 + 0.9239i   0.5556 +
0.8315i
 -0.7071 + 0.7071i  -0.4714 + 0.8819i  -0.1951 + 0.9808i   0.0980 +
0.9952i
 -1.0000 - 0.0000i  -0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 +
0.9239i
 -0.7071 - 0.7071i  -0.9569 - 0.2903i  -0.9808 + 0.1951i  -0.7730 +
0.6344i
 -0.0000 - 1.0000i  -0.5556 - 0.8315i  -0.9239 - 0.3827i  -0.9808 +
0.1951i
  0.7071 - 0.7071i   0.0980 - 0.9952i  -0.5556 - 0.8315i  -0.9569 -
0.2903i
  1.0000 + 0.0000i   0.7071 - 0.7071i  -0.0000 - 1.0000i  -0.7071 -
0.7071i
  0.7071 + 0.7071i   0.9952 - 0.0980i   0.5556 - 0.8315i  -0.2903 -
0.9569i
 -0.0000 + 1.0000i   0.8315 + 0.5556i   0.9239 - 0.3827i   0.1951 -
0.9808i
 -0.7071 + 0.7071i   0.2903 + 0.9569i   0.9808 + 0.1951i   0.6344 -
0.7730i
 -1.0000 + 0.0000i  -0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 -
0.3827i
 -0.7071 - 0.7071i  -0.8819 + 0.4714i   0.1951 + 0.9808i   0.9952 +
0.0980i
  0.0000 - 1.0000i  -0.9808 - 0.1951i  -0.3827 + 0.9239i   0.8315 +
0.5556i
  0.7071 - 0.7071i  -0.6344 - 0.7730i  -0.8315 + 0.5556i   0.4714 +
0.8819i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 + 0.0000i  -0.0000 +
1.0000i
  0.7071 + 0.7071i   0.6344 - 0.7730i  -0.8315 - 0.5556i  -0.4714 +
0.8819i
  0.0000 + 1.0000i   0.9808 - 0.1951i  -0.3827 - 0.9239i  -0.8315 +
0.5556i
```

```
 -0.7071 + 0.7071i   0.8819 + 0.4714i   0.1951 - 0.9808i  -0.9952 +
0.0980i
 -1.0000 - 0.0000i   0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 -
0.3827i
 -0.7071 - 0.7071i  -0.2903 + 0.9569i   0.9808 - 0.1951i  -0.6344 -
0.7730i
  0.0000 - 1.0000i  -0.8315 + 0.5556i   0.9239 + 0.3827i  -0.1951 -
0.9808i
  0.7071 - 0.7071i  -0.9952 - 0.0980i   0.5556 + 0.8315i   0.2903 -
0.9569i
  1.0000 - 0.0000i  -0.7071 - 0.7071i  -0.0000 + 1.0000i   0.7071 -
0.7071i
  0.7071 + 0.7071i  -0.0980 - 0.9952i  -0.5556 + 0.8315i   0.9569 -
0.2903i
 -0.0000 + 1.0000i   0.5556 - 0.8315i  -0.9239 + 0.3827i   0.9808 +
0.1951i
 -0.7071 + 0.7071i   0.9569 - 0.2903i  -0.9808 - 0.1951i   0.7730 +
0.6344i
 -1.0000 - 0.0000i   0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 +
0.9239i
 -0.7071 - 0.7071i   0.4714 + 0.8819i  -0.1951 - 0.9808i  -0.0980 +
0.9952i
 -0.0000 - 1.0000i  -0.1951 + 0.9808i   0.3827 - 0.9239i  -0.5556 +
0.8315i
  0.7071 - 0.7071i  -0.7730 + 0.6344i   0.8315 - 0.5556i  -0.8819 +
0.4714i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 - 0.0000i  -1.0000 -
0.0000i
  0.7071 + 0.7071i  -0.7730 - 0.6344i   0.8315 + 0.5556i  -0.8819 -
0.4714i
 -0.0000 + 1.0000i  -0.1951 - 0.9808i   0.3827 + 0.9239i  -0.5556 -
0.8315i
 -0.7071 + 0.7071i   0.4714 - 0.8819i  -0.1951 + 0.9808i  -0.0980 -
0.9952i
 -1.0000 + 0.0000i   0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 -
0.9239i
 -0.7071 - 0.7071i   0.9569 + 0.2903i  -0.9808 + 0.1951i   0.7730 -
0.6344i
  0.0000 - 1.0000i   0.5556 + 0.8315i  -0.9239 - 0.3827i   0.9808 -
0.1951i
  0.7071 - 0.7071i  -0.0980 + 0.9952i  -0.5556 - 0.8315i   0.9569 +
0.2903i
  1.0000 + 0.0000i  -0.7071 + 0.7071i  -0.0000 - 1.0000i   0.7071 +
0.7071i
  0.7071 + 0.7071i  -0.9952 + 0.0980i   0.5556 - 0.8315i   0.2903 +
0.9569i
  0.0000 + 1.0000i  -0.8315 - 0.5556i   0.9239 - 0.3827i  -0.1951 +
0.9808i
 -0.7071 + 0.7071i  -0.2903 - 0.9569i   0.9808 + 0.1951i  -0.6344 +
0.7730i
 -1.0000 - 0.0000i   0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 +
0.3827i
 -0.7071 - 0.7071i   0.8819 - 0.4714i   0.1951 + 0.9808i  -0.9952 -
0.0980i
```

```
  0.0000 - 1.0000i   0.9808 + 0.1951i  -0.3827 + 0.9239i  -0.8315 -
0.5556i
  0.7071 - 0.7071i   0.6344 + 0.7730i  -0.8315 + 0.5556i  -0.4714 -
0.8819i
  1.0000 - 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i  -0.0000 -
1.0000i
  0.7071 + 0.7071i  -0.6344 + 0.7730i  -0.8315 - 0.5556i   0.4714 -
0.8819i
 -0.0000 + 1.0000i  -0.9808 + 0.1951i  -0.3827 - 0.9239i   0.8315 -
0.5556i
 -0.7071 + 0.7071i  -0.8819 - 0.4714i   0.1951 - 0.9808i   0.9952 -
0.0980i
 -1.0000 - 0.0000i  -0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 +
0.3827i
 -0.7071 - 0.7071i   0.2903 - 0.9569i   0.9808 - 0.1951i   0.6344 +
0.7730i
 -0.0000 - 1.0000i   0.8315 - 0.5556i   0.9239 + 0.3827i   0.1951 +
0.9808i
  0.7071 - 0.7071i   0.9952 + 0.0980i   0.5556 + 0.8315i  -0.2903 +
0.9569i
  1.0000 + 0.0000i   0.7071 + 0.7071i  -0.0000 + 1.0000i  -0.7071 +
0.7071i
  0.7071 + 0.7071i   0.0980 + 0.9952i  -0.5556 + 0.8315i  -0.9569 +
0.2903i
 -0.0000 + 1.0000i  -0.5556 + 0.8315i  -0.9239 + 0.3827i  -0.9808 -
0.1951i
 -0.7071 + 0.7071i  -0.9569 + 0.2903i  -0.9808 - 0.1951i  -0.7730 -
0.6344i
 -1.0000 + 0.0000i  -0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 -
0.9239i
 -0.7071 - 0.7071i  -0.4714 - 0.8819i  -0.1951 - 0.9808i   0.0980 -
0.9952i
  0.0000 - 1.0000i   0.1951 - 0.9808i   0.3827 - 0.9239i   0.5556 -
0.8315i
  0.7071 - 0.7071i   0.7730 - 0.6344i   0.8315 - 0.5556i   0.8819 -
0.4714i

 Columns 61 through 64

  1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 + 0.0000i   1.0000 +
0.0000i
  0.9239 + 0.3827i   0.9569 + 0.2903i   0.9808 + 0.1951i   0.9952 +
0.0980i
  0.7071 + 0.7071i   0.8315 + 0.5556i   0.9239 + 0.3827i   0.9808 +
0.1951i
  0.3827 + 0.9239i   0.6344 + 0.7730i   0.8315 + 0.5556i   0.9569 +
0.2903i
 -0.0000 + 1.0000i   0.3827 + 0.9239i   0.7071 + 0.7071i   0.9239 +
0.3827i
 -0.3827 + 0.9239i   0.0980 + 0.9952i   0.5556 + 0.8315i   0.8819 +
0.4714i
 -0.7071 + 0.7071i  -0.1951 + 0.9808i   0.3827 + 0.9239i   0.8315 +
0.5556i
```

```
 -0.9239 + 0.3827i  -0.4714 + 0.8819i   0.1951 + 0.9808i   0.7730 +
0.6344i
 -1.0000 - 0.0000i  -0.7071 + 0.7071i  -0.0000 + 1.0000i   0.7071 +
0.7071i
 -0.9239 - 0.3827i  -0.8819 + 0.4714i  -0.1951 + 0.9808i   0.6344 +
0.7730i
 -0.7071 - 0.7071i  -0.9808 + 0.1951i  -0.3827 + 0.9239i   0.5556 +
0.8315i
 -0.3827 - 0.9239i  -0.9952 - 0.0980i  -0.5556 + 0.8315i   0.4714 +
0.8819i
  0.0000 - 1.0000i  -0.9239 - 0.3827i  -0.7071 + 0.7071i   0.3827 +
0.9239i
  0.3827 - 0.9239i  -0.7730 - 0.6344i  -0.8315 + 0.5556i   0.2903 +
0.9569i
  0.7071 - 0.7071i  -0.5556 - 0.8315i  -0.9239 + 0.3827i   0.1951 +
0.9808i
  0.9239 - 0.3827i  -0.2903 - 0.9569i  -0.9808 + 0.1951i   0.0980 +
0.9952i
  1.0000 + 0.0000i   0.0000 - 1.0000i  -1.0000 - 0.0000i   0.0000 +
1.0000i
  0.9239 + 0.3827i   0.2903 - 0.9569i  -0.9808 - 0.1951i  -0.0980 +
0.9952i
  0.7071 + 0.7071i   0.5556 - 0.8315i  -0.9239 - 0.3827i  -0.1951 +
0.9808i
  0.3827 + 0.9239i   0.7730 - 0.6344i  -0.8315 - 0.5556i  -0.2903 +
0.9569i
 -0.0000 + 1.0000i   0.9239 - 0.3827i  -0.7071 - 0.7071i  -0.3827 +
0.9239i
 -0.3827 + 0.9239i   0.9952 - 0.0980i  -0.5556 - 0.8315i  -0.4714 +
0.8819i
 -0.7071 + 0.7071i   0.9808 + 0.1951i  -0.3827 - 0.9239i  -0.5556 +
0.8315i
 -0.9239 + 0.3827i   0.8819 + 0.4714i  -0.1951 - 0.9808i  -0.6344 +
0.7730i
 -1.0000 - 0.0000i   0.7071 + 0.7071i   0.0000 - 1.0000i  -0.7071 +
0.7071i
 -0.9239 - 0.3827i   0.4714 + 0.8819i   0.1951 - 0.9808i  -0.7730 +
0.6344i
 -0.7071 - 0.7071i   0.1951 + 0.9808i   0.3827 - 0.9239i  -0.8315 +
0.5556i
 -0.3827 - 0.9239i  -0.0980 + 0.9952i   0.5556 - 0.8315i  -0.8819 +
0.4714i
  0.0000 - 1.0000i  -0.3827 + 0.9239i   0.7071 - 0.7071i  -0.9239 +
0.3827i
  0.3827 - 0.9239i  -0.6344 + 0.7730i   0.8315 - 0.5556i  -0.9569 +
0.2903i
  0.7071 - 0.7071i  -0.8315 + 0.5556i   0.9239 - 0.3827i  -0.9808 +
0.1951i
  0.9239 - 0.3827i  -0.9569 + 0.2903i   0.9808 - 0.1951i  -0.9952 +
0.0980i
  1.0000 + 0.0000i  -1.0000 - 0.0000i   1.0000 + 0.0000i  -1.0000 +
0.0000i
  0.9239 + 0.3827i  -0.9569 - 0.2903i   0.9808 + 0.1951i  -0.9952 -
0.0980i
```

```
  0.7071 + 0.7071i  -0.8315 - 0.5556i   0.9239 + 0.3827i  -0.9808 -
0.1951i
  0.3827 + 0.9239i  -0.6344 - 0.7730i   0.8315 + 0.5556i  -0.9569 -
0.2903i
 -0.0000 + 1.0000i  -0.3827 - 0.9239i   0.7071 + 0.7071i  -0.9239 -
0.3827i
 -0.3827 + 0.9239i  -0.0980 - 0.9952i   0.5556 + 0.8315i  -0.8819 -
0.4714i
 -0.7071 + 0.7071i   0.1951 - 0.9808i   0.3827 + 0.9239i  -0.8315 -
0.5556i
 -0.9239 + 0.3827i   0.4714 - 0.8819i   0.1951 + 0.9808i  -0.7730 -
0.6344i
 -1.0000 - 0.0000i   0.7071 - 0.7071i  -0.0000 + 1.0000i  -0.7071 -
0.7071i
 -0.9239 - 0.3827i   0.8819 - 0.4714i  -0.1951 + 0.9808i  -0.6344 -
0.7730i
 -0.7071 - 0.7071i   0.9808 - 0.1951i  -0.3827 + 0.9239i  -0.5556 -
0.8315i
 -0.3827 - 0.9239i   0.9952 + 0.0980i  -0.5556 + 0.8315i  -0.4714 -
0.8819i
  0.0000 - 1.0000i   0.9239 + 0.3827i  -0.7071 + 0.7071i  -0.3827 -
0.9239i
  0.3827 - 0.9239i   0.7730 + 0.6344i  -0.8315 + 0.5556i  -0.2903 -
0.9569i
  0.7071 - 0.7071i   0.5556 + 0.8315i  -0.9239 + 0.3827i  -0.1951 -
0.9808i
  0.9239 - 0.3827i   0.2903 + 0.9569i  -0.9808 + 0.1951i  -0.0980 -
0.9952i
  1.0000 + 0.0000i  -0.0000 + 1.0000i  -1.0000 - 0.0000i  -0.0000 -
1.0000i
  0.9239 + 0.3827i  -0.2903 + 0.9569i  -0.9808 - 0.1951i   0.0980 -
0.9952i
  0.7071 + 0.7071i  -0.5556 + 0.8315i  -0.9239 - 0.3827i   0.1951 -
0.9808i
  0.3827 + 0.9239i  -0.7730 + 0.6344i  -0.8315 - 0.5556i   0.2903 -
0.9569i
 -0.0000 + 1.0000i  -0.9239 + 0.3827i  -0.7071 - 0.7071i   0.3827 -
0.9239i
 -0.3827 + 0.9239i  -0.9952 + 0.0980i  -0.5556 - 0.8315i   0.4714 -
0.8819i
 -0.7071 + 0.7071i  -0.9808 - 0.1951i  -0.3827 - 0.9239i   0.5556 -
0.8315i
 -0.9239 + 0.3827i  -0.8819 - 0.4714i  -0.1951 - 0.9808i   0.6344 -
0.7730i
 -1.0000 - 0.0000i  -0.7071 - 0.7071i   0.0000 - 1.0000i   0.7071 -
0.7071i
 -0.9239 - 0.3827i  -0.4714 - 0.8819i   0.1951 - 0.9808i   0.7730 -
0.6344i
 -0.7071 - 0.7071i  -0.1951 - 0.9808i   0.3827 - 0.9239i   0.8315 -
0.5556i
 -0.3827 - 0.9239i   0.0980 - 0.9952i   0.5556 - 0.8315i   0.8819 -
0.4714i
  0.0000 - 1.0000i   0.3827 - 0.9239i   0.7071 - 0.7071i   0.9239 -
0.3827i
```

```
   0.3827 - 0.9239i   0.6344 - 0.7730i   0.8315 - 0.5556i   0.9569 -
0.2903i
   0.7071 - 0.7071i   0.8315 - 0.5556i   0.9239 - 0.3827i   0.9808 -
0.1951i
   0.9239 - 0.3827i   0.9569 - 0.2903i   0.9808 - 0.1951i   0.9952 -
0.0980i

Warning: Using only the real component of complex data.
Warning: Using only the real component of complex data.
Warning: Using only the real component of complex data.
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Warning: Using only the real component of complex data.
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Warning: Using only the real component of complex data.
Warning: Using only the real component of complex data.
```

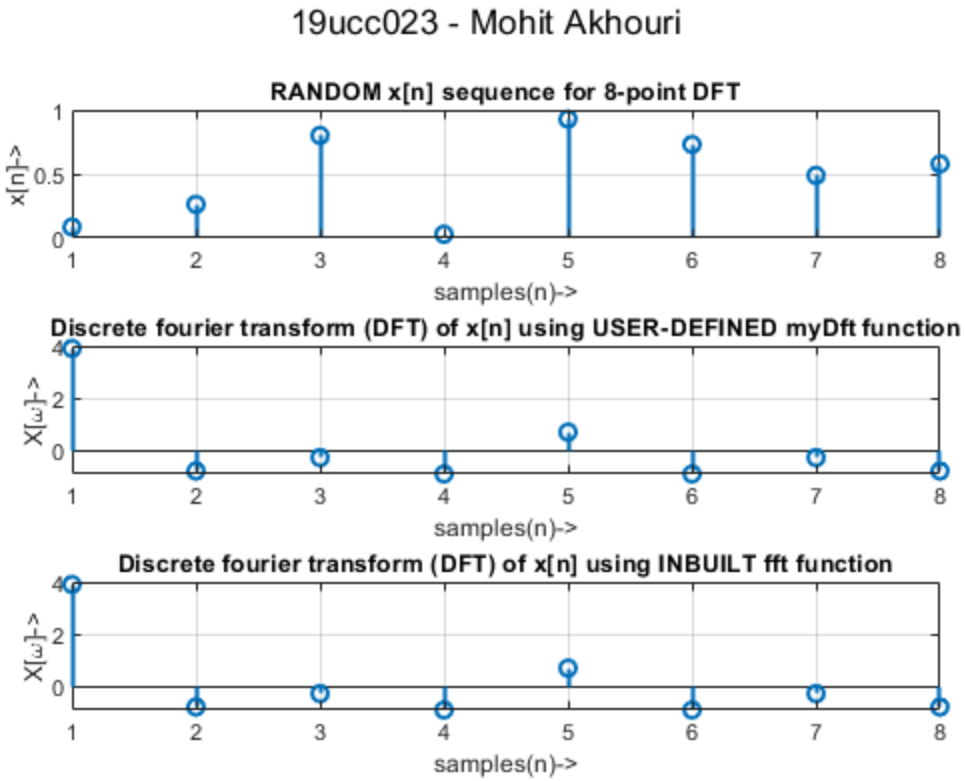

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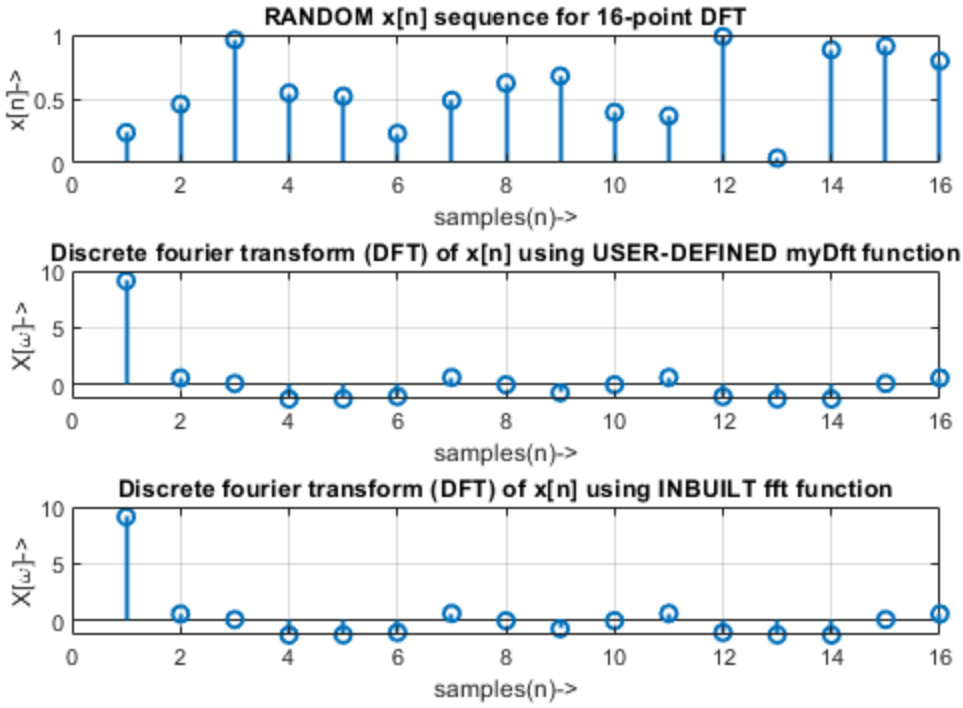

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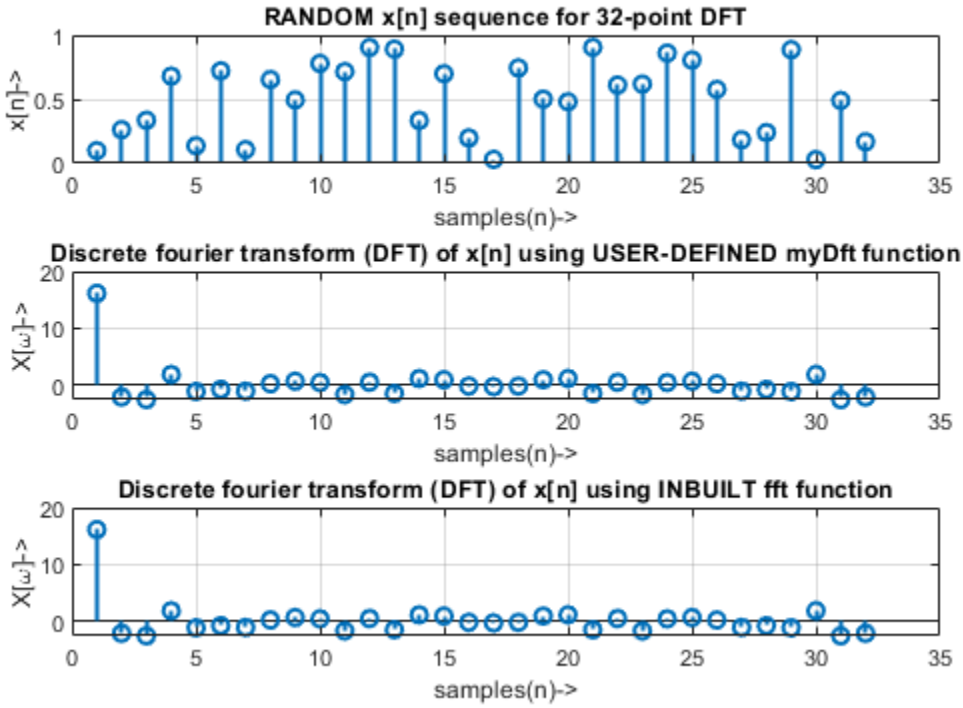

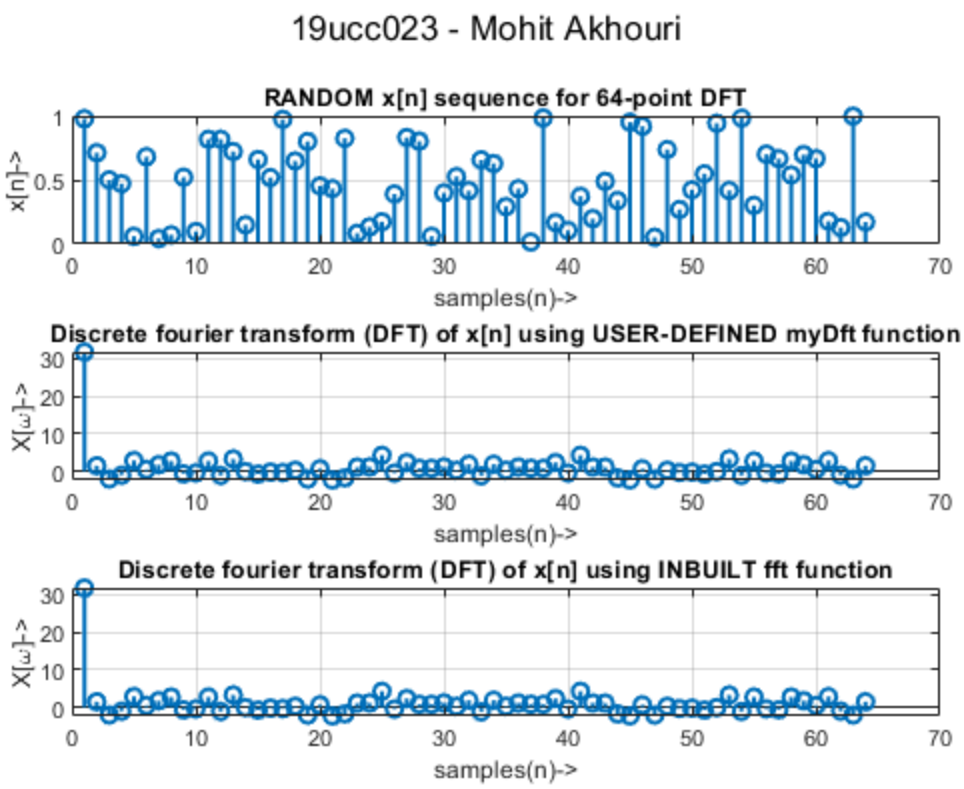

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