clc

clear

format compact

disp('Problem: 8')

A = zeros(4,3);

%i is the rows, j is the columns

for i = 1:4

for j = 1:3

%A(i,j) is computed

A(i,j)= (i+j)/(j^2);

end

end

fprintf('The resulting matrix is\n')

disp(A)

disp('Problem: 13')

format long

%m is the number of terms

m = [5 10 20];

%i is the loop for the given m

for i = 1:3

%j is the index for the sum

sum = 0;

for j = 0:m(i)

%Adds new term to the running sum

sum = sum + (-1/3)^j/(2\*j+1);

end

sum = sum\*sqrt(12);

%Calculates difference between pi and the series

diff = sum - pi;

fprintf('Sum: %3.15f \nPi: %3.15f \nDifference: %3.15f\n',sum,pi,diff)

end

disp('Problem 15')

format short g

x = [-3.5 -5 6.2 11 0 8.1 -9 0 3 -1 3 2.5];

%P and N are empty matricies

P = [];

N = [];

n = length(x);

%The for loop goes through each element of x

for i = 1:n

%if x is positive, then add x to the positive matrix

if x(i) > 0

P = [P x(i)];

%if x is negative, then add x to the negative matrix

elseif x(i) < 0

N = [N x(i)];

end

end

fprintf('The positive elements : %3.3f\n',P)

fprintf('The negative elements: %3.3f\n',N)

Command Window:

Problem: 8  
The resulting matrix is  
 2.00000 0.75000 0.44444  
 3.00000 1.00000 0.55556  
 4.00000 1.25000 0.66667  
 5.00000 1.50000 0.77778  
Problem: 13  
Sum: 3.141308785462883   
Pi: 3.141592653589793   
Difference: -0.000283868126910  
Sum: 3.141593304503081   
Pi: 3.141592653589793   
Difference: 0.000000650913288  
Sum: 3.141592653595635   
Pi: 3.141592653589793   
Difference: 0.000000000005842  
Problem 15  
The positive elements : 6.200  
The positive elements : 11.000  
The positive elements : 8.100  
The positive elements : 3.000  
The positive elements : 3.000  
The positive elements : 2.500  
The negative elements: -3.500  
The negative elements: -5.000  
The negative elements: -9.000  
The negative elements: -1.000