**Assignment 1**

Course Name： Numerical Analysis

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Major： Information & Communication Technology

1.

y = @(x) sqrt(x) - cos(x);

x1 = input('Enter the value of x1: ');

x2 = input('Enter the value of x2: ');

if y(x1)\*y(x2) > 0

fprintf('No root exist within the given interval \n');

return

end

if y(x1) == 0

fprintf('x1 is one of the roots \n')

return

elseif y(x2) == 0

fprintf('x2 is one of the root \n')

return

end

for i = 1: 3

xh = (x1+x2)/2; % bisection

if y(x1)\*y(xh) < 0

x2 = xh;

else

x1 = xh;

end

if abs(y(x1)) < 1.0E-6

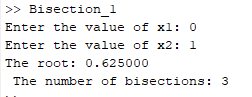
break

end

end

fprintf('The root: %f\n The number of bisections: %d\n',x1,i)

P3 [0,1] = **0.625000**



2.

y = @(x) 3\*((x+1) \* (x - (1/2)) \* (x-1));

x1 = input('Enter the value of x1: ');

x2 = input('Enter the value of x2: ');

if y(x1)\*y(x2) > 0

fprintf('No root exist within the given interval \n');

return

end

if y(x1) == 0

fprintf('x1 is one of the roots \n')

return

elseif y(x2) == 0

fprintf('x2 is one of the root \n')

return

end

for i = 1: 3

xh = (x1+x2)/2; % bisection

if y(x1)\*y(xh) < 0

x2 = xh;

else

x1 = xh;

end

if abs(y(x1)) < 1.0E-6

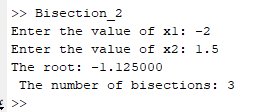
break

end

end

fprintf('The root: %f\n The number of bisections: %d\n',x1,i)

1. [-2, 1.5] = **-1.125000**



1. [-1.25,2.5] = **0.625000**

