**CSU33081 Multiple Choice Answers**

Please enter your answers (A – E) and upload with your type written solutions as a .docx file

Q 1 Answer: E: None of the above

function Xs = SquareRoot(p)

if p <= 0

error('Input must be a positive number');

end

x = p;

max\_iterations = 20;

tolerance = 0.00001;

for iteration = 1:max\_iterations

f\_x = x^2 - p;

f\_prime\_x = 2 \* x;

x\_new = x - (f\_x / f\_prime\_x);

relative\_error = abs((x\_new - x) / x\_new);

x = x\_new;

if relative\_error < tolerance

break;

end

end

Xs = x;

End

When max iterations is changed to 5, and 729 is given as an input, the answer given is 32.5596

Q2 Answer:

Q3 Answer:

Q 4 Answer:

Q 5 Answer: C: 1.900475

%Init variables

x0 =3;

x1 = 2.5;

f = @(x) 16\*x.^5 - 73\*x.^2 - 133;

error = 0.001;

i = 0;

while abs(x1-x0)>error

    f\_x0 = f(x0);

    f\_x1 = f(x1);

    x\_temp = (x1 - ((f\_x1 \* (x0-x1))/(f\_x0 - f\_x1)));

    x0=x1;

    x1=x\_temp;

    i=i+1;

    % Display the current approximation and error

    fprintf('Iteration %d: x = %.6f, Error = %.6f\n', i, x1, abs(x1 - x0));

end

% Display final result

fprintf('Root found: x = %.6f\n', x1);

Q 6 Answer: E: None of the above

% Newton Raphson

f = @(x) x.^6 - x.^2 - 1;

f\_prime = @(x) 6\*x.^5 - 2\*x;

error = 0.001;

xi = 1.5; % Initial guess

while true

x\_new = xi - f(xi) / f\_prime(xi); % Compute the new x value

if abs(x\_new - xi) < error

break

end

xi = x\_new; % Update xi to the new value

end

% Display final result

fprintf('Root found: x = %.6f\n', xi);

Answer obtained from the above calculations was “Root found: x = 1.151017”

Q 7 Answer:

Q 8 Answer:

Q 9 Answer:

Q 10 Answer: