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Dept: Civil Engg.

Course: ENG 382.

Assignment.

- command window

- clear

- clc

- format short g

- x(1) = 0.5;

- k = 1

- for i = 1:5 - 21;

- max1 = 50;

- error(k) = 0

- syms x

- g = (exp(x) - 0.5 * x) * (1 - x) - 2;

- g_prime = diff(g);

- for k = 2:max1;

$$x(k) = (x(k-1)) - (subs(g, x(k-1)) / subs(g_prime, x(k-1)))$$

k = [k k];

$$err(k) = abs(x(k) - x(k-1)) * 100;$$

if err(k) <= tol, break, end;

- end

table = [k' x' err']

1	0.5	0
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2	0.83889	33.889
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3	0.88571	4.6065
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4	0.88571	0.07526
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5	0.88571	1.9704e ⁻⁰⁵
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6	0.88571	1.3545e ⁻¹²
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7	0.88571	0
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