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 MATRIC NO: 15/ENG041040  
 DEPARTMENT: ELECT/ELECT ENGR.

i)  $f(y) = \cos(y)$   
 $y_0 = 0.05$

when  $y = 0.05$

$f(y) = \cos(0.05)$

$y = 0.9999996192$

$y = 0.9999996192$

Therefore  $f(y) = \cos(0.9999996192)$

$= 0.9998476953$

$f(y) = \cos(0.9998476953)$

$= 0.9998477415$

$y = 0.9998477415$

$f(y) = \cos(0.9998477415)$   
 $= 0.9998477415$

$y = 0.9998477415$

$f(y) = \cos(0.9998477415)$   
 $= 0.9998477415$

$y$

$0.05$

$0.9999996192$

$0.9998476953$

$0.9998477415$

$0.9998477415$

$f(y) \rightarrow (1.1)$

$0.9999996192$

$0.9998476953$

$0.9998477415$

$0.9998477415$

$0.9998477415$

ii)  $f(z) = 8^{-152} - z + \cos(z)$

$z = 8^{-152} + \cos(z)$

$f(z) = 8^{-152} + \cos(z)$

$z_0 = 0.1$

when  $z = 0.1$

$f(z) = 1.223128637$

when  $z = 1.223128637$

$f(z) = 0.9997721589$

when  $z = 0.9997721589$

$f(z) = 0.9998480715$

when  $z = 0.9998480715$

$f(z) = 0.999848048$

$z$

$0.1$

$1.223128637$

$0.9997721589$

$0.9998480715$

$0.999848048$

$f(z) \rightarrow z(i+1)$

$1.223128637$

$0.9997721589$

$0.9998480715$

$0.999848048$

$0.999848048$

$$2) \frac{dx}{dt} + 2x = 10e^{3t}$$

$$x = 6 \text{ when } t = 0$$

$$x'(t) + 2x(t) = 10e^{3t}$$

$$L\{x'(t)\} = sX(s) - x(0)$$

$$L\{x(t)\} = X(s)$$

$$L\{e^{3t}\} = \frac{1}{s-3}$$

$$sX(s) - x(0) + 2X(s) = 10 \cdot \left\{ \frac{1}{s-3} \right\}$$

$$(s+2)X(s)$$