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1.) $F(y) = \cos(y)$

$\cos y = 0$

$y_{i+1} = \cos y_i + y_i$

with guess value of $y = 0.05$

$y_{i+1} = \cos(0.05) + 0.05$

$y_{i+1} = 1.0500$.

when $y_i = 1.0500$

$y_{i+1} = \cos(1.05) + 1.05$

$= 2.0498$

when $y_i = 2.0498$

$y_{i+1} = \cos(2.0498) + 2.0498$

$= 3.04916$.

when $y_i = 3.04916$

$y_{i+1} = \cos(3.04916) + 3.04916$.

$= 4.0477$.

when $y_i = 4.0477$.

$y_{i+1} = \cos(4.0477) + 4.0477$.

$= 5.0452$.

when $y_i = 5.0452$.

$y_{i+1} = \cos(5.0452) + 5.0452$.

Question 2.

2.) $F(z) = e^{-15z} - 2 + \cos(z)$

$e^{-15z} - 2 + \cos(z) = 0$

$z = e^{-15z} + \cos(z)$

$z_{i+1} = e^{-15z_i} + \cos(z_i)$

with an initial guess value of $z = 0.1$

$z_{i+1} = e^{-15(0.1)} + \cos(0.1)$

$= 1.2281$

when $z_i = 1.2281$

$z_{i+1} = e^{-15(1.2281)} + \cos(1.2281)$.

$= 0.9998$.

Q.E.D.

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When $z_i = 0.9998$

$$z_{i+1} = e^{-15(0.9998)} + \cos(0.9998)$$

$$= 0.99985$$

When $z_i = 0.99985$

$$z_{i+1} = e^{-15(0.99985)} + (0.9985)$$

$$z_i = 0.99985$$

Q.E.D.

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