

Sol #1

(a)  $x + 3\cos x - e^x = 0 \quad x \in [-4, 4]$

$x_1 \in [-4, 0],$

# of iterations = 20

$x_1 \approx -1.0783$

$|f(x_1)| \approx 6.1303 \times 10^{-6}$

$x_2 \in [0, 4]$

# of iterations = 20

$x_2 \approx 0.9768$

$|f(x_2)| \approx 2.9354 \times 10^{-6}$

(b)  $e^x - 2 - \cos(e^x - 2) \quad x \in [-4, 4]$

$x_1 \in [-4, 4]$

# of iterations = 21

$x_1 \approx 1.0076$

$|f(x_1)| \approx 7.3722 \times 10^{-6}$

$$\#1(c) \quad e^x + 2^{-x} + 2\cos x - 6 = 0 \quad x \in [-4, 4]$$

$$x_1 \in [-4, 0]$$

# of iterations = 20

$$x_1 \approx -2.9865$$

$$|f(x_1)| \approx 3.3557 \times 10^{-6}$$

$$x_2 \in [0, 4]$$

# of iterations = 19

$$x_2 \approx 1.8294$$

$$|f(x_2)| \approx 1.0178 \times 10^{-6}$$

Sol # 2

(a)  $x + 3\cos x - e^x = 0$ ,  $x \in [-4, 4]$

$x_0 = +2$

# of iterations = ~~5~~

$x_1 \approx 0.9768$

$|f(x_1)| \approx 1.6653 \times 10^{-14}$

(b)  $e^x - 2 - \cos(e^x - 2) = 0$ ,  $x \in [-4, 4]$

$x_0 = 1.5$

$x_1 \approx 1.0076$

# of iterations = 4

$|f(x_1)| \approx 4.3664 \times 10^{-11}$

(c)  $e^x + e^{-x} + 2\cos x - 6 = 0$ ,  $x \in [-4, 4]$

$x_0 = 2$

# of iterations = 6

$x_1 \approx 1.8294$

$|f(x_1)| \approx 7.4845 \times 10^{-7}$