2. $f(x) = x^4 - 2x - 3$

$f'(x) = 4x^3 - 2$

$$\text{NEW } x = x - \frac{x^4 - 2x - 3}{4x^3 - 2}$$

$x_1 = 1$ $\quad$ $x_2 = 3$ $\quad$ $x_3 = 2.32075$

$$x_2 = x_1 - \frac{f(x_1)}{f'(x_1)} \qquad x_3 = x_2 - \frac{f(x_2)}{f'(x_2)} \qquad x_4 = x_3 - \frac{f(x_3)}{f'(x_3)}$$

$$x_2 = 1 - \frac{f(1)}{f'(1)} \qquad x_3 = 3 - \frac{f(3)}{f'(3)}$$

$$x_2 = 1 - \frac{1^4 - 2(1) - 3}{4(1)^3 - 2} \qquad x_3 = 3 - \frac{3^4 - 2(3) - 3}{4(3)^3 - 2}$$

$$x_2 = 1 - \frac{-4}{2} \qquad x_3 = 3 - \frac{81 - 6 - 3}{108 - 2}$$

$$= 1 + 2 \qquad = 3 - \frac{72}{106}$$

$$= 3 \qquad = 2.32075$$

$x = 1.57474$

$x = -1$