

$$1) \quad x_0 = -1 \quad f'(x) = 2x + 7 \quad f(x) = x^2 + 7x - 9$$

$$x_1 = x_0 - \frac{f(x_0)}{f'(x_0)} = (-1) - \frac{((-1)^2 + 7(-1) - 9)}{2(-1) + 7} = 2$$

$$x_2 = x_1 - \frac{f(x_1)}{f'(x_1)} = (2) - \frac{((2)^2 + 7(2) - 9)}{2(2) + 7} = 1.1818$$

$$x_3 = 1.11032$$

$$x_4 = 1.10977$$

$$x_5 = 1.10977$$

$$2) \quad x_0 = 5 \quad g(x) = 2x^3 - 3x^2 - 16x + 1 \quad g'(x) = 6x^2 - 6x - 16$$

$$x_1 = x_0 - \frac{g(x_0)}{g'(x_0)} = 5 - \frac{2(5)^3 - 3(5)^2 - 16(5) + 1}{6(5)^2 - 6(5) - 16} = 4.07692$$

$$x_2 = x_1 - \frac{g(x_1)}{g'(x_1)} = 3.71524$$

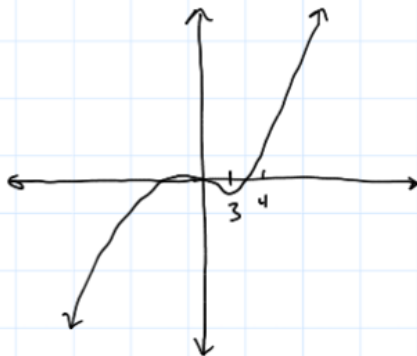
$$x_3 = 3.65438$$

$$x_4 = 3.65269$$

$$x_5 = 3.65269$$

$$3a) \quad h(x) = 2x^3 - 2x^2 - 20x + 9 \quad h'(x) = 6x^2 - 4x - 20$$

$$x_0 = 4$$



$$\begin{array}{c|c} 1 & -11 \\ 2 & -23 \\ 3 & -15 \\ 4 & 25 \end{array} \quad \left. \vphantom{\begin{array}{c|c} 1 & -11 \\ 2 & -23 \\ 3 & -15 \\ 4 & 25 \end{array}} \right] \text{ goes across axis}$$

$$3b) \quad x_0 = 4$$

$$x_1 = x_0 - \frac{f(x_0)}{f'(x_0)} = 4 - \frac{2(4)^3 - 2(4)^2 - 20(4) + 9}{6(4)^2 - 4(4)^2 - 20} = 3.5833$$

$$x_2 = x_1 - \frac{f(x_1)}{f'(x_1)} = 3.49729$$

$$x_3 = 3.49366$$

$$x_4 = 3.49365$$