

## Homework #23

## Answers

From Houghton-Mifflin Precalculus 3<sup>rd</sup> Edition

p170:

$$36) a) \begin{array}{r|rrrrrrr} 2 & 1 & 0 & -4 & 0 & 3 & 0 & 2 \\ & & 2 & 4 & 0 & 0 & 6 & 12 \\ \hline & 1 & 2 & 0 & 0 & 3 & 6 & \underline{14} \end{array} \quad g(2) = 14$$

$$b) \begin{array}{r|rrrrrrr} -4 & 1 & 0 & -4 & 0 & 3 & 0 & 2 \\ & & -4 & 16 & -48 & 192 & -780 & 3120 \\ \hline & 1 & -4 & 12 & -48 & 195 & -780 & \underline{3122} \end{array} \quad g(-4) = 3122$$

$$c) \begin{array}{r|rrrrrrr} 3 & 1 & 0 & -4 & 0 & 3 & 0 & 2 \\ & & 3 & 9 & 15 & 45 & 144 & 432 \\ \hline & 1 & 3 & 5 & 15 & 48 & 144 & \underline{434} \end{array} \quad g(3) = 434$$

$$d) \begin{array}{r|rrrrrrr} -1 & 1 & 0 & -4 & 0 & 3 & 0 & 2 \\ & & -1 & 1 & 3 & -3 & 0 & 0 \\ \hline & 1 & -1 & -3 & 3 & 0 & 0 & \underline{2} \end{array} \quad g(-1) = 2$$

$$37) a) \begin{array}{r|rrrr} 3 & 3 & 5 & -10 & 1 \\ & & 9 & 42 & 96 \\ \hline & 3 & 14 & 32 & \underline{97} \end{array} \quad h(3) = 97$$

$$b) \begin{array}{r|rrrr} 1/3 & 3 & 5 & -10 & 1 \\ & & 1 & 2 & -8/3 \\ \hline & 3 & 6 & -8 & \underline{-5/3} \end{array} \quad h(1/3) = -25/3$$

$$c) \begin{array}{r|rrrr} -2 & 3 & 5 & -10 & 1 \\ & & -6 & 2 & 16 \\ \hline & 3 & -1 & -8 & \underline{17} \end{array} \quad h(-2) = 17$$

$$d) \begin{array}{r|rrrr} -5 & 3 & 5 & -10 & 1 \\ & & -15 & 50 & -200 \\ \hline & 3 & -10 & 40 & \underline{-199} \end{array} \quad h(-5) = -199$$

$$40) \begin{array}{r|rrrr} -4 & 1 & 0 & -28 & -48 \\ & & -4 & 16 & 48 \\ \hline & 1 & -4 & -12 & \underline{0} \end{array} \quad \begin{aligned} & (x + 4)(x^2 - 4x - 12) \\ & = (x + 4)(x - 6)(x + 2) \quad x = \{-4, 6, -2\} \end{aligned}$$

$$41) \begin{array}{r|rrrr} \frac{1}{2} & 2 & -15 & 27 & -10 \\ & & 1 & -7 & 10 \\ \hline & 2 & -14 & 20 & \underline{0} \end{array} \quad (2x - 1)(x^2 - 14x + 20) \quad x = \{\frac{1}{2}, 7 \pm \sqrt{29}\}$$