Homework 38.2

1.   A baseball is thrown into the air and its height (h), in feet, can be modeled by the equation $h = -16t^2 + 3t + 3$, where t represents time in seconds.

How many seconds will it take for the baseball to hit the ground ($h = 0$) after it is thrown into the air?

Answer _____

2.   Suppose a soccer player kicks a ball and the height (h) of the ball in feet can be modeled by the equation $h = -16t^2 + vt + c$, where t is the time in seconds after the ball is kicked, v is the initial upward velocity, and c is the starting height.

Write an equation that can be used to find the height (h) of the ball after t seconds if the initial upward velocity is 50 ft/sec and the starting height is 3.5 ft.

Answer _____

If the ball is not touched, how long will it take for the ball to reach the ground?

Answer _____

3.   A woman is going to jump into a pool from a diving board that is 40 ft above the water. Her height (h) above the pool can be modeled by the equation $h = -16t^2 + vt + c$, where t is the time in seconds after the woman jumps, v is the initial upward velocity, and c is her starting height.

Write an equation that can be used to find the height (h) of the woman after t seconds if her initial upward velocity is 4 ft/sec.
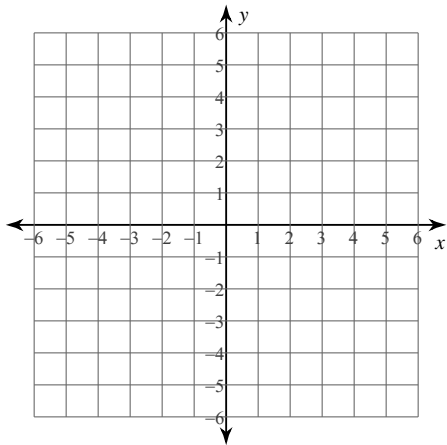
Answer _____

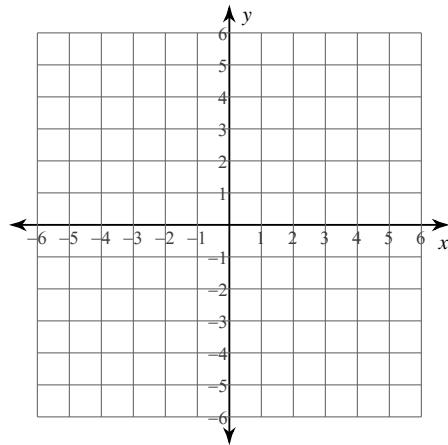How many seconds will it take for the woman to hit the water?

Answer _____

Sketch the graph of each linear inequality.

1) $y \le \dfrac{2}{5}x + 2$

2) $y \le \dfrac{1}{2}x + 1$
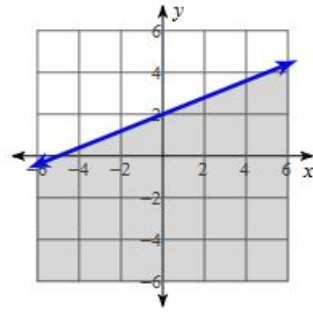
Divide.

3) $\left(20x^4 + 3x^3 + 10x^2\right) \div 10x^2$

4) $\left(30k^4 + 30k^3 + 50k^2\right) \div 10k^2$

Answers to Homework 38.2

1.   1.0 seconds   2. $h = -16t^2 + 50t + 3.5$; 3.2 seconds

3. $h = -16t^2 + 40t + 4$; 1.7 seconds   4.
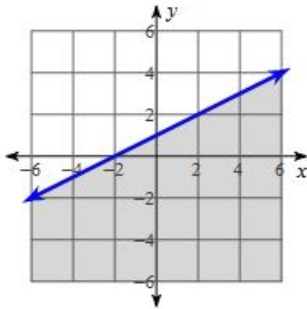

5.   6. $2x^2 + \dfrac{3x}{10} + 1$ 7. $3k^2 + 3k + 5$