Unit 6 (Chapter 9) Part 1 Review

1) What is the vertex of the graph of $y = \frac{1}{4}(x-2)^2 + 6$?

a) (0,7)   b) (2,6)   c) (-2,-6)   d) (4,7)   e) (-2,6)

2) What are the domain and range of the function in problem 1?

a) D: All real #s   b) D: All real #s   c) D: All real #s   d) D: $x > 4$ e) D: $x > -2$
    R: $y > 7$ R: $y \geq 6$ R: $y \leq -6$ R: $y > 7$ R: $y > 6$

3) What is the vertex of the graph of $y = -4(x-1)(x+5)$?

a) Maximum at (-2, 36)   b) Maximum at (2,-28)   c) Minimum at (-1,5)

d) Minimum (-2, 36)   e) Minimum (3,16)

4) What are the zeros of the function in problem 3?

a) -5 & 1   b) -1 & 5   c) -4, -1, 5   d) 0, -5, 2   e) -2

5) What is the vertex of the graph of $y = 3x^2 - 12x + 13$?

a) (-2,1)   b) (2,1)   c) (-2,-1)   d) (0,13)   e) (2, -1)

6) Which best describes the dilation from the function in problem 5?

a) Vertical stretch   b) Vertical   c) No change   d) Horizontal stretch   e) Reflection
                            compression

7) What is the y-intercept of the function in problem 5?

a) (0,-12)   b) (0, -2)   c) (0, 2)   d) (0, 3)   e) (0, 13)

8) What is the axis of symmetry of the graph of $y = \frac{1}{2}(x+2)(x-6)$?

a) $x = 6$ b) $x = -2$ c) $x = 2$ d) $x = -6$ e) $x = -12$

9) What is the translation that occurs in the function in problem 8?

a) Right 2   b) Left 2   c) Right 2   d) Left 2   e) Left 6
   Down 8   Down 8   Up 8

10) What is the standard form of the quadratic function: $y = -5(x+2)^2 + 18$?

a) $y = -5x^2 - 20x - 2$ b) $y = 5x^2 - 20x - 2$ c) $y = -5x^2 - 20x + 2$

d) $y = -5x^2 + 20x - 2$ e) $y = -5x^2 + 20x + 2$

11) A golf ball is hit from ground level into the air following the path of the equation $y = -0.1x^2 + 10x$ (Assume the x-axis is ground level.)

     a) If you assume the point at which the golf ball is hit is (0,0) at what point does the ball come down and hit the ground?

         $(100, 0)$

     b) If you assume all points to be in terms of yards, how far was the ball from the golfer when it hit the ground?

         100 yards

     c) At what point did the golf ball reach its maximum height?

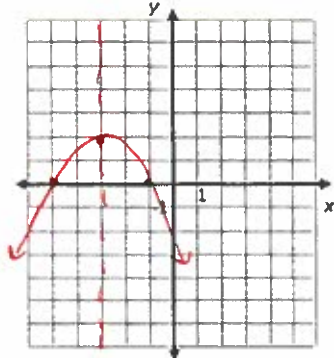   50 yards

     d) What was the maximum height of the golf ball in terms of yards?
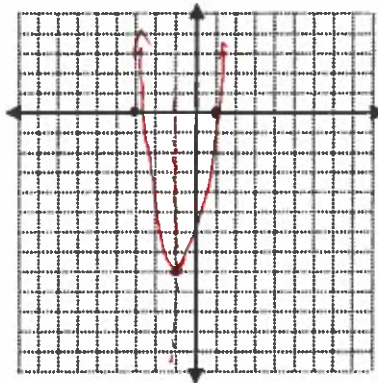
         250 yards

     e) Find the equation for the path of the golf ball if it still lands the same distance from the golfer as in part (b) but reaches a maximum height of 125 yards instead of the maximum height found in part (d).

For 12 – 14, graph.

12) $y = -\dfrac{1}{2}(x+3)^2 + 2$ 13) $y = 2x^2 + 4x - 6$ 14) $y = (x+5)(x-1)$