Secondary Math 2 Name_____

6.3 Writing Equations from Key Features

Date_____ Period____

Write the quadratic equation for the following.

1) x - intercepts of $(2, 0)$ and $(-4, 0)$ and passes through the point $(-1, -3)$.

2) x - intercepts of $(-7, 0)$ and $(5, 0)$ and passes through the point $(-2, 10)$.

3) x - intercepts of $(-2, 0)$ and $(4, 0)$ and passes through the point $(2, 8)$.

4) x - intercepts of $(-10, 0)$ and $(-4, 0)$ and passes through the point $(-3, 2)$.

5) x - intercepts of $(-2, 0)$ and $(9, 0)$ and passes through the point $(-1, -10)$.

6) Vertex: (-1,9) and passes through the point (3, 7)

7) Vertex: (3,-3) and passes through the point (7,-9)

8) Vertex: (0,-5) and passes through the point (-2,-1)

9) Vertex: (4,0) and passes through the point (1,6)

10) Vertex: (3,4) and passes through the point (0,1)

11) A ball is thrown into the air. The path of the ball is represented by the equation $h = -(t-4)^2 + 16$ where h represents height and t represents time.

i) What is the ball's maximum height?

ii) How long does it take for the ball to hit that maximum height?

iii) How high will the ball be after 5 seconds? 2 seconds?

iv) At what time will the ball bounce on the ground?

v) Determine a domain and range for the ball.

12) After t seconds, a ball is tossed in the air from ground level and reaches a height of h given by the equation: $h = -16(t-4.5)^2 + 324$

i) What is the height after 3 seconds?

ii) What is the maximum height the ball will reach?

iii) After how many seconds will the ball hit the ground?

iv) Determine a domain and range for the ball.