LESSON 2.5 Assignment

Name _____ Date _____

What's the Point?

Deriving Quadratic Functions

2

1. Use your knowledge of reference points to write an equation for the quadratic function that has x-intercepts at $(-1, 0)$ and $(1, 0)$ and a y-intercept at $(0, -3)$.

2. Use your knowledge of reference points to write an equation for the quadratic function that has a vertex at $(4, -3)$ and passes through $(6, -1)$.

3. Use your knowledge of reference points to write an equation for the quadratic function that has 1 x-intercept at $(-7, 0)$ and passes through $(-4, -18)$.

4. Create a system of equations and use algebra to write a quadratic function that passes through the points (–2, 8), (1, 14), and (0, 10).

2

5. Victoria competes in a discus throwing competition. She needs to throw her discus at least 200 feet to win the event. The discus has an initial height of 5 feet when she releases it. The discus reaches a height of 25 feet after traveling 75 feet and a height of 20 feet after traveling 150 feet.

   a. Write a quadratic function to model the height of the discus as a function of the distance traveled.

   b. Does Victoria win the competition? Explain your reasoning.

   c. What was the maximum height of the discus?