## Unit 7 Lesson 24: Quadratic Situations

### 1 Growing Plants (Warm up)

#### Student Task Statement

Plant A’s height over time is represented by . Plant B’s height is for which represents the number of weeks since the plants were found, and represents the height in inches.



1. Which graph goes with which equation? How do you know?
2. What is a pair of values that works for Plant A but not B? What does it represent?
3. What is a pair of values that works for Plant B but not A? What does it represent?
4. What is a pair of values that works for both plants? What does it represent?

### 2 Diego’s Plant

#### Student Task Statement

1. The height, in centimeters, of Diego’s plant is represented by the equation where represents the number of weeks since Diego has started nurturing the plant. Determine if each statement is true or false. Explain your reasoning.
   * Diego’s plant shrinks each week.
   * Diego’s plant is 8 cm tall when he starts to nurture it.
   * Diego’s plant grows to be 58 cm tall.
   * The plant shrinks 4 weeks after Diego begins to nurture it.
2. Write your own true statement about Diego’s plant.

### 3 Making the Grades

#### Student Task Statement

Jada’s quiz grade after hours of studying is given by the equation . Her test grade after hours of studying is given by the equation .

Here’s a graph of both functions:



1. Which graph represents Jada’s quiz grade after hours of studying?
2. What do the -intercepts of the lines mean in this situation?
3. Find the coordinates of the -intercepts.
4. The 2 lines intersect at a point. What does that point represent in this situation?
5. Find the coordinates of the intersection point. Explain or show your reasoning.



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