

Name \_\_\_\_\_

**Lesson 7: Creating and Solving Quadratic Equations****WARM UP**

Mischief is a Toy Poodle who competes with her trainer in the agility course. Within the course, Mischief must leap through a hoop. Mischief's jump can be modeled by the equation  $h = -16t^2 + 12t$ , where  $h$  is the height of the leap in feet and  $t$  is the time since the leap, in seconds. At what values of  $t$  does Mischief start and end the jump?

**LEARNING  
OUTCOMES**

- I can create and solve quadratic equations

**Example 1**

The length of a rectangle is 5 in. more than twice a number. The width is 4 in. less than the same number. If the area of the rectangle is 15, find the unknown number.

**Example 2**

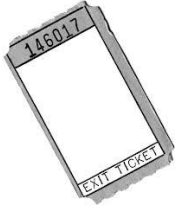
A picture has a height that is  $\frac{4}{3}$  its width. It is to be enlarged so that the ratio of height to width remains the same but the area is 192 sq in. What are the dimensions of the enlargement?



3. Karen wants to plant a garden and surround it with decorative stones. She has enough stones to enclose a rectangular garden with a perimeter of 68 ft., and she wants the garden to cover 240 sq ft. What will the length and width of her garden be?
4. Find two consecutive odd integers whose product is 99. [Note: There are two different pairs of consecutive odd integers and only an algebraic solution will be accepted.]



3. A student is painting an accent wall in his room where the length of the room is 3 ft. more than its width. The wall has an area of  $130 \text{ ft}^2$ . What are the length and the width, in feet?
4. Find two consecutive even integers whose product is 80. (There are two pairs and only an algebraic solution will be accepted.)



Name \_\_\_\_\_

## Lesson 7: Exit Ticket



1. The perimeter of a rectangle is 54 cm. If the length is 2 cm more than a number and the width is 5 cm less than twice the same number. What is the number?

2. A plot of land for sale has a width of  $x$  ft. and a length that is 8 ft. less than its width. A farmer will only purchase the land if it measures 240 sq. ft. What value for  $x$  will cause the farmer to purchase the land?