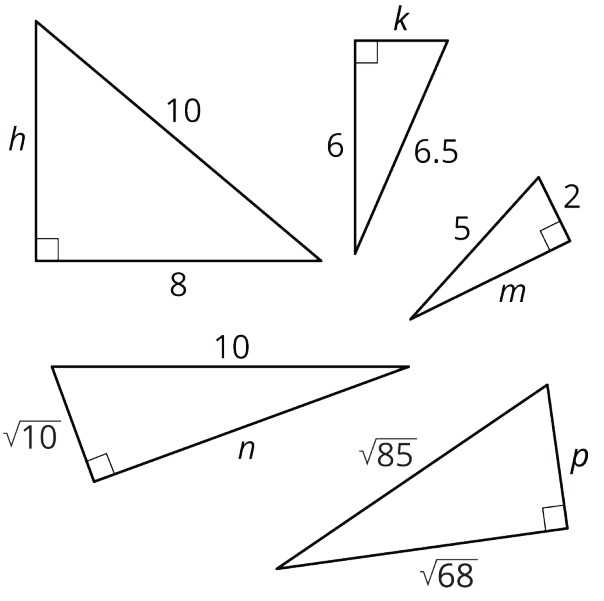
Lesson 8 Practice Problems

1. Find the exact value of each variable that represents a side length in a right triangle.



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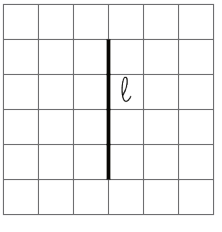
2. A right triangle has side lengths of a, b, and c units. The longest side has a length of c units. Complete each equation to show three relations among a, b, and c.
   - $c^2 =$
   - $a^2 =$
   - $b^2 =$

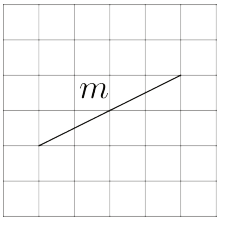
(From Unit 8, Lesson 7.)

3. What is the exact length of each line segment? Explain or show your reasoning. (Each grid square represents 1 square unit.)

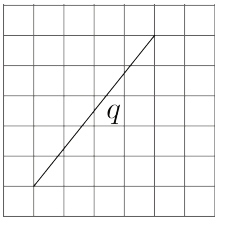
a.



b.



c.



(From Unit 8, Lesson 7.)

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4. In 2015, there were roughly 1×10^6 high school football players and 2×10^3 professional football players in the United States. About how many times more high school football players are there? Explain how you know.

(From Unit 7, Lesson 15.)

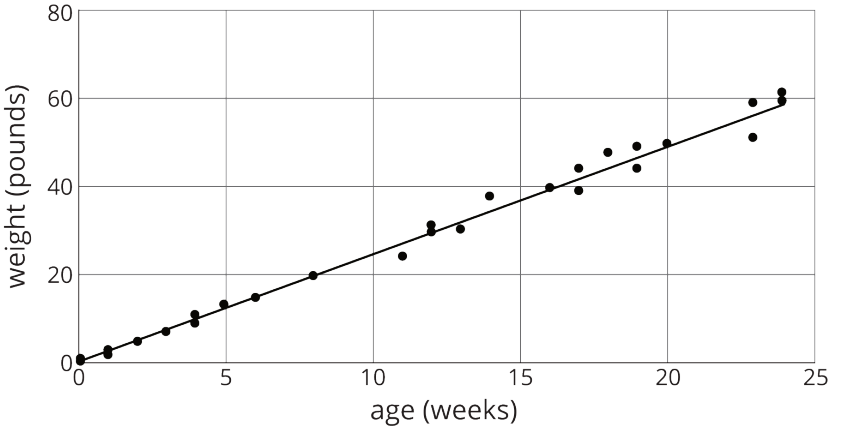
5. Evaluate:

   a. $\left(\frac{1}{2}\right)^3$

   b. $\left(\frac{1}{2}\right)^{-3}$

(From Unit 7, Lesson 6.)

6. Here is a scatter plot of weight vs. age for different Dobermans. The model, represented by $y = 2.45x + 1.22$, is graphed with the scatter plot. Here, x represents age in weeks, and y represents weight in pounds.



   a. What does the slope mean in this situation?

   b. Based on this model, how heavy would you expect a newborn Doberman to be?

(From Unit 6, Lesson 6.)

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