Lesson 9 Practice Problems

1. For each situation, explain whether you think the relationship is proportional or not. Explain your reasoning.

   a. The weight of a stack of standard 8.5x11 copier paper vs. number of sheets of paper.

   b. The weight of a stack of different-sized books vs. the number of books in the stack.

2. Every package of a certain toy also includes 2 batteries.

   a. Are the number of toys and number of batteries in a proportional relationship? If so, what are the two constants of proportionality? If not, explain your reasoning.

   b. Use t for the number of toys and b for the number of batteries to write two equations relating the two variables.
   $b =$ $t =$

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3. Lin and her brother were born on the same date in different years. Lin was 5 years old when her brother was 2.

   a. Find their ages in different years by filling in the table.

Lin's age	Her brother's age
5	2
6	
15	
	25

   b. Is there a proportional relationship between Lin's age and her brother's age? Explain your reasoning.

4. A student argues that $y = \frac{x}{9}$ does not represent a proportional relationship between x and y because we need to multiply one variable by the same constant to get the other one and not divide it by a constant. Do you agree or disagree with this student?

(From Unit 2, Lesson 8.)

5. Quadrilateral A has side lengths 3, 4, 5, and 6. Quadrilateral B is a scaled copy of Quadrilateral A with a scale factor of 2. Select **all** of the following that are side lengths of Quadrilateral B.

   A. 5

   B. 6

   C. 7

   D. 8

   E. 9

(From Unit 1, Lesson 3.)

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