### Lesson 14 Practice Problems

1. For each situation, write an expression answering the question. The expression should only use multiplication.
   1. A person's salary is $2,500 per month. She receives a 10% raise. What is her new salary, in dollars per month?
   2. A test had 40 questions. A student answered 85% of the questions correctly. How many questions did the student answer correctly?
   3. A telephone cost $250. The sales tax is 7.5%. What was the cost of the telephone including sales tax?
2. In June, a family used 3,500 gallons of water. In July, they used 15% more water.

* Select **all** the expressions that represent the number of gallons of water the family used in July.

1. Han’s summer job paid him $4,500 last summer. This summer, he will get a 25% pay increase from the company.

* Write two different expressions that could be used to find his new salary, in dollars.
  1. Military veterans receive a 25% discount on movie tickets that normally cost $16. Explain why represents the cost of a ticket using the discount.
  2. A new car costs $15,000 and the sales tax is 8%. Explain why represents the cost of the car including tax.

1. The number of grams of a chemical in a pond is a function of the number of days, , since the chemical was first introduced. The function, , is defined by  .
   1. What is the average rate of change between day 0 and day 7?
   2. Is the average rate of change a good measure for how the amount of the chemical in the pond has changed over the week? Explain your reasoning.

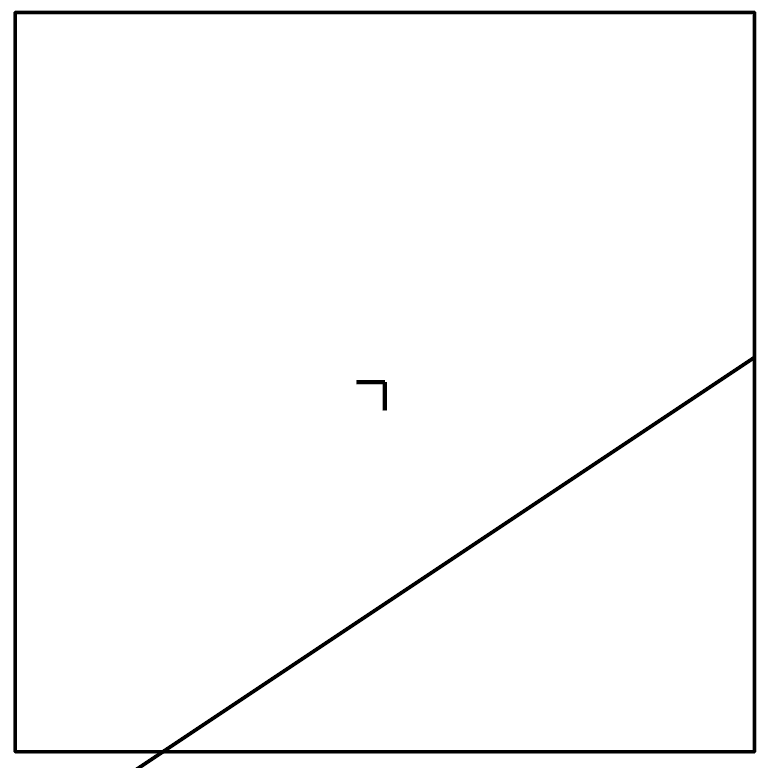
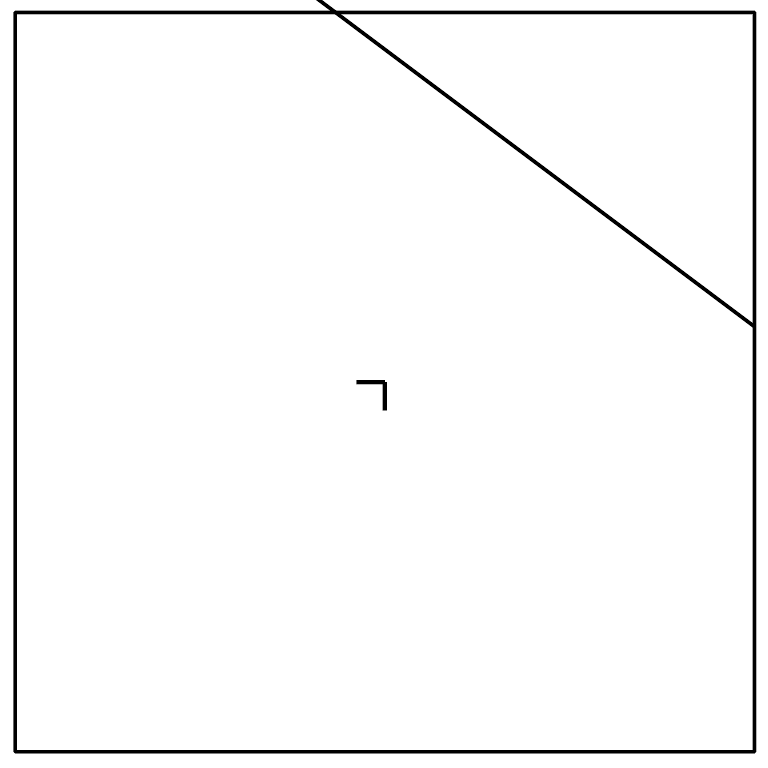
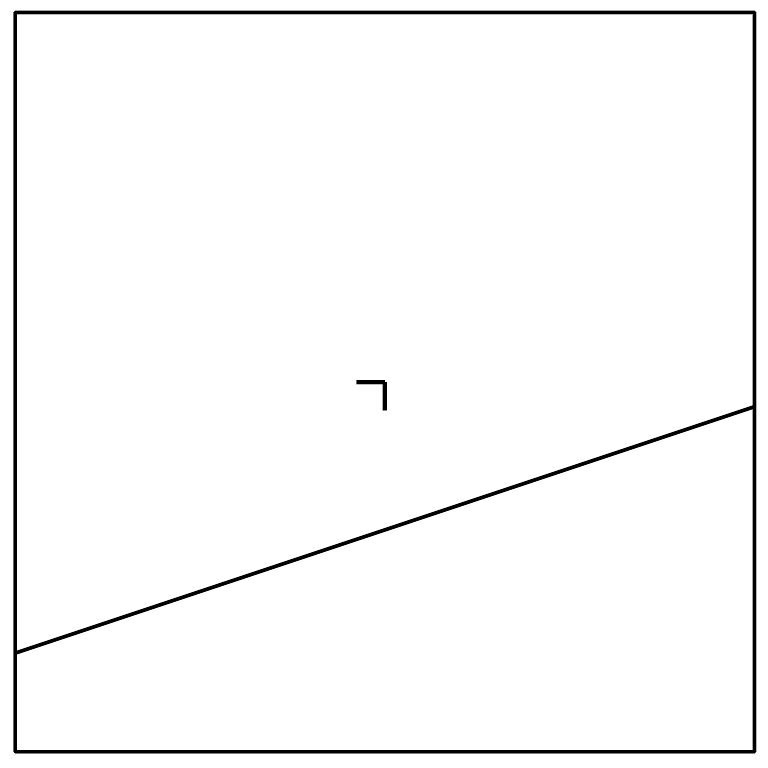
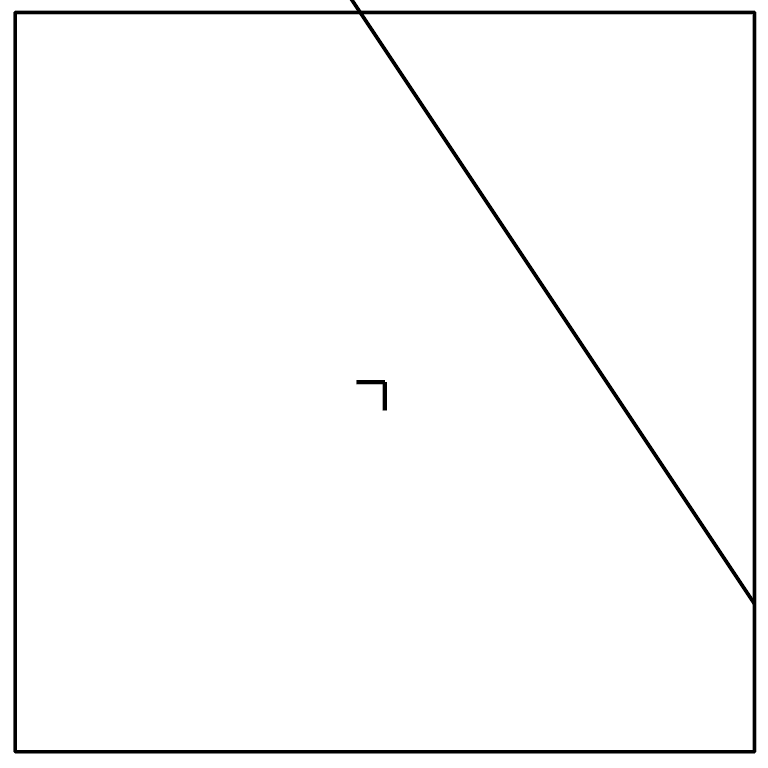
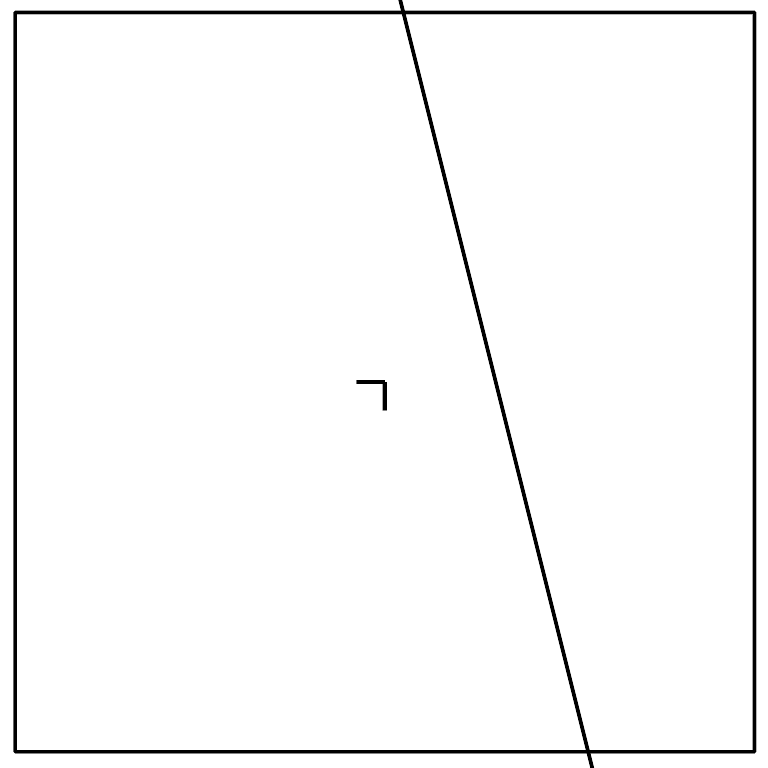
* (From Unit 5, Lesson 10.)

1. A piece of paper is 0.004 inches thick.
   1. Explain why the thickness in inches, , is a function of the number of times the paper is folded, .
   2. Using function notation, represent the relationship between  and . That is, find a function so that .

* (From Unit 5, Lesson 8.)

1. The function represents the amount of a medicine, in mg, in a person's body hours after taking the medicine. Here is a graph of .
   1. How many mg of the medicine did the person take?
   2. Write an equation that defines .
   3. After 7 hours, how many mg of medicine remain in the person's body?

* 
* (From Unit 5, Lesson 13.)

1. Match each inequality to the graph of its solution.
   1. 
   2. 
   3. 
   4. 
   5. 

* (From Unit 2, Lesson 23.)



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