

Lesson 14 Practice Problems

1. For each situation, write an expression answering the question. The expression should only use multiplication.
 - a. A person's salary is \$2,500 per month. She receives a 10% raise. What is her new salary, in dollars per month?
 - b. A test had 40 questions. A student answered 85% of the questions correctly. How many questions did the student answer correctly?
 - c. 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.

- A. $3,500 + 0.15 \cdot 3,500$
 - B. $3,500 + 0.15$
 - C. $3,500 \cdot (1 - 0.15)$
 - D. $3,500 \cdot (1.15)$
 - E. $3,500 \cdot (1 + 0.15)$
3. 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.

4.
 - a. Military veterans receive a 25% discount on movie tickets that normally cost \$16. Explain why $16(0.75)$ represents the cost of a ticket using the discount.
 - b. A new car costs \$15,000 and the sales tax is 8%. Explain why $15,000(1.08)$ represents the cost of the car including tax.

5. The number of grams of a chemical in a pond is a function of the number of days, d , since the chemical was first introduced. The function, f , is defined by $f(d) = 550 \cdot \left(\frac{1}{2}\right)^d$.

- What is the average rate of change between day 0 and day 7?
- 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.)

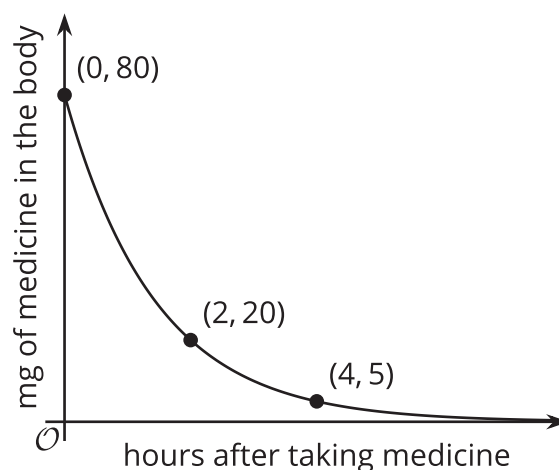
6. A piece of paper is 0.004 inches thick.

- Explain why the thickness in inches, t , is a function of the number of times the paper is folded, n .
- Using function notation, represent the relationship between t and n . That is, find a function f so that $t = f(n)$.

(From Unit 5, Lesson 8.)

7. The function f represents the amount of a medicine, in mg, in a person's body t hours after taking the medicine. Here is a graph of f .

- How many mg of the medicine did the person take?
- Write an equation that defines f .
- After 7 hours, how many mg of medicine remain in the person's body?



(From Unit 5, Lesson 13.)

8. Match each inequality to the graph of its solution.

A. $3x + 4y \leq 36$

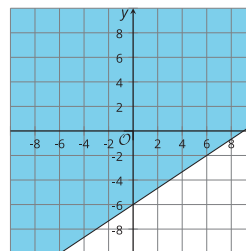
B. $12x + 3y \leq 36$

C. $6x + 4y \geq 36$

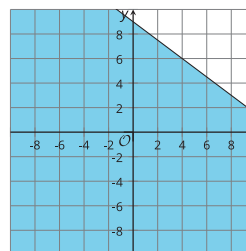
D. $3x - 9y \geq 36$

E. $4x - 6y \leq 36$

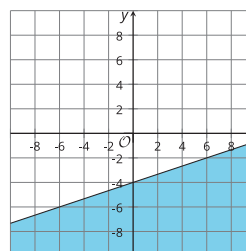
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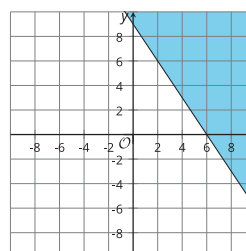
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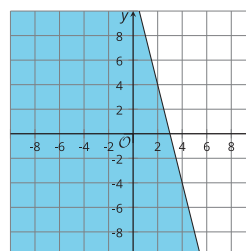
3.



4.



5.



(From Unit 2, Lesson 23.)