### 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. $3,​500+0.15⋅3,​500$
	2. $3,​500+0.15$
	3. $3,​500⋅\left(1−0.15\right)$
	4. $3,​500⋅\left(1.15\right)$
	5. $3,​500⋅\left(1+0.15\right)$
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 $16\left(0.75\right)$ represents the cost of a ticket using the discount.
	2. A new car costs $15,000 and the sales tax is 8%. Explain why $15,​000\left(1.08\right)$ 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, $d$, since the chemical was first introduced. The function, $f$, is defined by  $f\left(d\right)=550⋅\left(\frac{1}{2}\right)^{d}$.
	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, $t$, is a function of the number of times the paper is folded, $n$.
	2. Using function notation, represent the relationship between $t$ and $n$. That is, find a function $f$ so that $t=f\left(n\right)$.
* (From Unit 5, Lesson 8.)
1. 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 $f$.
	1. How many mg of the medicine did the person take?
	2. Write an equation that defines $f$.
	3. After 7 hours, how many mg of medicine remain in the person's body?
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* (From Unit 5, Lesson 13.)
1. Match each inequality to the graph of its solution.
	1. $3x+4y\leq 36$
	2. $12x+3y\leq 36$
	3. $6x+4y\geq 36$
	4. $3x−9y\geq 36$
	5. $4x−6y\leq 36$
	6. 
	7. 
	8. 
	9. 
	10. 
* (From Unit 2, Lesson 23.)



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