Name _____ Date _____ Class _____

 # SKILL 10: Translating Words to Algebraic Expressions

A **variable** is a letter or other symbol that stands for a number. An **expression** is made up of numbers, variables, and/or operation symbols. Some words can be translated into specific mathematical or algebraic expressions.

Word	Definition	Expressions	
sum	The result of **adding** numbers	$7 + 2$	$8 + x$
difference	The result of **subtracting** numbers	$12 - 3$	$28 - y$
product	The result of **multiplying** numbers	4×16	$8c$ or $8 \cdot c$
quotient	The result of **dividing** numbers	$81 \div 9$	$\frac{14}{s}$ or $14 \div s$

To translate situations that don't use these words, you need to choose an operation that is appropriate for the situation. It may be easier to choose an operation if you first replace the variable with a number.

Example

Write an expression to answer: **What is the quotient of 99 divided by x?**

Step 1 What operation is being done?

A quotient is the answer when dividing, so use division to write the expression.

Step 2 Use the appropriate operation sign to write the expression.

$99 \div x$ or $\frac{99}{x}$

The expressions $99 \div x$ and $\frac{99}{x}$ show the quotient of 99 divided by x.

Guided Practice

Write an expression to answer each question.

1. What is 12 minus r?

   a. What operation is being done? _____

   b. Write the expression. _____

2. What is 32 times as large as y?

   a. What operation is being done? _____

   b. Write the expression. _____

3. What is g increased by 10?

   a. What operation is being done? _____

   b. Write the expression. _____

4. What is 24 more than n? _____

5. What is 11 less than b? _____

6. What is d divided by 5? _____

SKILL 10: Practice

Write the phrase as an expression.

1. 12 more than x _____

2. x less than 36 _____

3. 2 times 23 _____

4. 17 times s _____

5. b multiplied by 5 _____

6. y decreased by 10 _____

7. 64 plus k _____

8. u tripled _____

9. p divided by 8 _____

10. 18 minus x _____

11. 4 less than k _____

12. z increased by 12 _____

Write an expression to answer each question.

13. What is the product of 82 and g? _____

14. What is the difference between n and 7? _____

15. What is the quotient of 32 and x? _____

16. What is the sum of h and 7? _____

17. Carolyn makes t batches of 12 cookies. How many cookies did she make? _____

18. A jar holds n ounces of jam. How many jars are needed for 100 ounces of jam? _____

19. Brian had p pencils. Then he bought 4 more. How many does he have now? _____

20. Tammy plants 6 rows of t tomato plants each. How many tomato plants did she plant? _____

TEST PREP

21. Which expression means d less than 17?

    Skill 10

    A $d - 17$ **C** $d \div 17$

    B $17 - d$ **D** $17 \div d$

22. Simplify: $7 \cdot 6 - 7 \cdot 2$.

    Skill 9

    F 70   **H** 28

    G 38   **J** −14