NAME CLASS DATE

Expressions and Equations

An ***equation*** is a mathematical sentence that contains an equal (=) sign.
An ***expression*** has numbers and symbols.

The table below shows some of the keys words you can use in word phrases for variable expressions.

Addition	Subtraction	Multiplication	Division
plus	minus	times	quotient
sum	difference	product	per
add	subtract	in all	each
sum	less than	multiply	split
total	decreased by		divide

EXAMPLE A

Is $7x + 5$ and expression or an equation?

Solution: $7x + 5$ is an expression because it does not contain an equal sign.

EXAMPLE B

Write an expression to represent six more than a number.

Step 1: *Look for words to tell you which operation or operations to use.* "more than" means to add

Step 2: *Write an expression for "six more."* $+ 6$

Step 3: *Write an expression for "a number." Let n represent a number.* $n + 6$

Solution: The expression $n + 6$ can represent six more than a number.

Expressions can be *evaluated* (not solved) by substituting values for the variables. Once the values are substituted, use the order of operations to evaluate.

EXAMPLE C

What is the value of $5x + 3y$, if $x = 3.2$ and $y = 5$?

Step 1: *Substitute the value for the variables.*

Step 2: *Simplify using the order of operations.*

$$5x + 3y$$
$$5(3.2) + 3(5)$$
$$= 16 + 15$$
$$= 31$$

Solution: The value of the expression is 31.

PRACTICE

Identify each as an expression or equation.

1. $7x + 4 + 2y$

2. $9x - 15 = 24$

3. $15 - 2x + 7 - x$

4. $8x + 2 - x = 9$

Write an expression for each word phrase.

5. a number decreased by three

6. three-fourths of a number

7. two more than three times a number

8. seven less than a number

9. the product of a number and 8

10. a number divided by 6

11. two less than three times a number

12. seven increased by a number

Evaluate each expression if $x = 4.2$ and $y = 2.7$.

13. $2x + 3$

14. $16 - 3y$

15. $x + y$

16. $x - 3$

17. $8x - y$

18. $21 + 5y$

19. $3x - y$

20. $7y - 3x$