

1-10-18

Aim: SWBAT translate verbal expressions into mathematical equations.

HW: Packet Pages 3 - 4
Quiz Next Week

Do Now: Write your name on your packet.

KEYWORDS & PHRASES

ADDITION (+)	SUBTRACTION (-)	MULTIPLICATION (•)	DIVISION (÷)
Total	Subtract	Multiplied by	Quotient
Plus	Minus	Product	Divided by
Altogether	*Difference ()	Times	Separate
*Sum ()	*Less than (<)	Double/triple	Equal groups
Add	*Taken away from (-)	Of	Equal parts
Combine	Decreased by	Per	Split
*More than (>)	*Subtracted from (-)	Each	Half
In all	*Fewer than (<)	Area	
Increased by	Left over		
*Is added to (+)	Remain		
Perimeter			

EQUALS (=)
Is
Is equal to
Is the same as
Is equivalent to

IS LESS THAN (<)	IS GREATER THAN (>)	IS LESS THAN OR EQUAL TO (≤)	IS GREATER THAN OR EQUAL TO (≥)
Is less than Is fewer than	Is greater than Is more than	Is less than or equal to Is no more than Is at most	Is greater than or equal to Is at least Is no less than

AIM: SWBAT translate equations and continue solving 1-step and 2-Step equations.

An **equation** is a mathematical sentence that contains an equal sign (=).

An **algebraic equation** is an equation that contains at least one variable.

When translating equations into mathematical equations . . .

- Identify the key words
- Translated in the exact order they are read
- Switch the order when you read: "less than", "more than", "fewer than", "subtracted from" and "taken away from" (** Notice that "than" and "from" are the key words here!)
- Place parentheses around sums and differences
- Equations will contain one or more operations +, -, ·, or ÷ (use a fraction bar to translate division) **and** an equal sign.
- The word "is" usually suggests a need for an equal sign.

****ALWAYS DEFINE A VARIABLE (LET STATEMENT) IF A VARIABLE IS NOT GIVEN****

Write an algebraic equation to represent each of the following.

1. The difference of six times a number, x and 9 is -3.

$$\underline{(6x - 9) = -3}$$

2. Eleven less than the quotient of y and 2 is 4.

$$\underline{\frac{y}{2} - 11 = 4}$$

3. The product of six and a number, y , is 48.

$$\underline{6y = 48}$$

4. Twelve subtracted from n is twice n .

$$\underline{n - 12 = 2n}$$

5. Eight is one-half x decreased by seven.

$$8 = \frac{x}{2} - 7$$

$$\underline{8 = \frac{1}{2}x - 7}$$

* 6. Five times the sum of m and twelve is six.

$$\underline{5(m + 12) = 6}$$

Define a variable, then write an algebraic equation to represent each situation.

7. Nicholas has 28 coins in his collection. That is 5 more than his brother Sam has in his collection. Write an equation that represents the number of coins, c , that Sam has.

Let C = # of coins that Sam has

Equation: $28 = C + 5$

Now solve your equation to find out how many coins Sam has.

8. Mr. Edwards purchased 3 bags of potatoes. He bought 36 potatoes in all. Each bag contains the same number of potatoes. Write an equation that represents this situation.

Let x = # of potatoes in each bag

Equation: $3x = 36$ ~~$\frac{36}{3} = x$~~

Each bag contains the same number of potatoes. Now solve your equation to find the number of potatoes in each bag.

You Try!

9. Phoebe is 3 years less than half her brother's age. Phoebe is 13 years old. Her brother is b years old. Write an equation that could be used to find her brother's age.

Let _____ = _____

Equation: _____

10. Nigel went to an ice rink and paid \$5 admission plus an additional \$2.50 per hour to rent skates. The total cost was \$15. Write an equation that represents h , the number of hours for which Nigel rented skates.

Let _____ = _____

Equation: _____

Homework - Translating Equations & Solving Two Step Equations

Write an algebraic expression or equation to represent each of the following. Remember to read the words carefully to decide if it is an expression or an equation.

- 1) The product of seven and y is sixteen. _____
- 2) Four times a number increased by eight _____
- 3) Sixteen less than a number, x is 3 more than y. _____
- 4) Ten decreased by x is fifteen decreased by n. _____
- 5) Fifty is twelve subtracted from x. _____
- 6) Twice the sum of x and y is three times z. _____
- 7) Sixteen is the product of eight and y. _____
- 8) Twice the difference of x and three is nine. _____
- 9) The quotient of eleven and v is seven minus x. _____
- 10) Five times the difference of nine and x _____

Define a variable, then write an equation using your variable to represent the situation.

- 11) Three times a number decreased by five is fifty.

Let _____ = _____

Equation: _____

- 12) Mark spent \$15 at the state fair, the admission fee is \$5 and the rides cost \$2 each.
Write an equation that could be used to find the number of rides Mark went on.

Let _____ = _____

Equation: _____

- 13) Lou has 36 rocks in his collection. He separated them into equal piles of 12 rocks each.
Write an equation that could be used to find out how many piles Lou has.

Let _____ = _____

Equation: _____

Now solve your equation to find out how many piles of rocks Lou made.