

Jan 29

Warm-up

1) What does m equal???

$$m + 7 = 23$$
$$\cancel{m + 7} - 7 = \cancel{23} - 7$$
$$m = 16$$

2) What does v equal???

~~_____~~

Developing Equations Using Letter Variables

What is an Equation?

- An equation is a mathematical statement that shows two expressions are equal.
 - > Example: $4 + 5 = 9$
- The equal sign (=) means "is the same as." Both sides of the equation must have the same value.



Preservation of Equality

- When we perform the same operation on both sides of an equation, the equality stays true (it is preserved).
 - > Example: If $3+2=5$, adding 4 to both sides gives:

$$3+2+4=5+4$$

$$9 = 9$$

– BOTH SIDES STAY EQUAL

That is what we have been doing...

(a) $6 + n = 9$

~~$6 + n = 9$~~
 $n = 3$

(b) $20 + v = 24$

~~$20 + v = 24$~~
 $v = 4$

(c) $c - 16 = 4$

~~$c - 16 = 4$~~
 $c = 20$

~~How to Develop Equations Using Variables~~

1. Describe a situation in words

- > ~~A number plus 4 equals 9~~

$$K + 4 = 9$$

- > A number subtract 6 equals 12

$$S - 6 = 12$$

A number

Words you should look for to decide which operation (addition or subtraction) to use:

Addition

sum

plus

increased by

Subtraction

difference

minus

decreased by

reduced by

YOU TRY:

(A) A number plus 7 equals 10

$$x + 7 = 10$$

(B) The **difference** between a number and 3 is 7
subtraction

$$\underline{a} - \underline{3} = 7$$

(C) The **sum** of a number and 5 is 22

$$\underline{n} + \underline{5} = 22$$