Writing Equations From Word Problems

9/23

* Remember to write an expression for each "missing" piece to help set up your equation. (Let statements)
  - Something is usually just a "plain old" x.

Jackson has 2 more cookies than Landon. Together they have 6. How many do they each have?

Let Landon = x = 2 cookies
Let Jackson = $x+2$ = 4 cookies

$x+x+2=6$

$2x+2=6$

$-2 \quad -2$

$\frac{2x=4}{2 \quad 2}$

$\boxed{x=2}$

Sep 18-8:10 AM

Key Words for Algebra word problems:

Consecutive Integers: In order

ex) Find 3 consecutive integers whose sum is 57.

#1 = x → 18
#2 = $x+1$ → 19
#3 = $x+2$ → 20

$x+x+1+x+2=57$

$3x+3=57$

$-3 \quad -3$

$\frac{3x=54}{3 \quad 3}$

$\boxed{x=18}$

Consecutive odd/even integers:

Odd: 3, 5, 7 — $x, x+2, x+4$

even: 2, 4, 6 — $x, x+2, x+4$

Sep 18-8:23 AM

Examples:

12(2) = 24 cookies Kept

1 Kendal bought x boxes of cookies to bring to a party. Each box contains 12 cookies. She decides to keep two boxes for herself. She brings 60 cookies to the party. Which equation can be used to find the number of boxes, x, Kendal bought?

1) $2x - 12 = 60$
2) $12x - 2 = 60$
3) $12x - 24 = 60$
4) $24 - 12x = 60$

2 John has four more nickels than dimes in his pocket, for a total of \$1.25. Which equation could be used to determine the number of dimes, x, in his pocket?

1) $0.10(x + 4) + 0.05(x) = \$1.25$
2) $0.05(x + 4) + 0.10(x) = \$1.25$
3) $0.10(4x) + 0.05(x) = \$1.25$
4) $0.05(4x) + 0.10(x) = \$1.25$

d = .10x

n = 0.5(x+4)

Sep 18-8:15 AM

3 A gardener is planting two types of trees:
Type A is three feet tall and grows at a rate of 15 inches per year.
Type B is four feet tall and grows at a rate of 10 inches per year.
Algebraically determine exactly how many years it will take for these trees to be the same height.

A = B

A: 36 + 15x

B: 48 + 10x

$36 + 15x = 48 + 10x$
$-36 \quad -10x \quad -36 \quad -10x$

$\frac{5x}{5} = \frac{12}{5}$

x = 2.4 years

Sep 18-8:15 AM