Name_____ Pd_____ Date_____ **Section 1.C.8**

Solving Proportions

To set up a proportion, you must align units _____.

To solve a proportion, you _____.

Ex. 1 A florist is making centerpieces. He uses 2 dozen roses for every 5 centerpieces. How many dozens of roses will he need to make 20 centerpieces?

You Try 2 If 5 pounds of pasta salad serves 12 people, how many pounds of pasta salad do you need for a picnic with 60 people?

Ex. 3 Write in how the student got from each line to the next line.

$\frac{2x-5}{7} = \frac{x+2}{8}$	
$8(2x-5) = 7(x+2)$	
$16x - 40 = 7x + 14$	
$-7x \quad -7x$	
$9x - 40 = 14$	
$+40 \quad +40$	
$9x = 54$	
$x = 6$	

Ex. 4 $\frac{b-8}{5} = \frac{b+3}{4}$

You Try 5 $\frac{8}{2x-6} = \frac{3}{x+2}$

Ex. 6 Mrs. Russell and Ms. Draper are making a candy mix. The mix started with x of each type of candy, but Mrs. Russell added 3 Skittles and Ms. Draper ate 5 M&Ms. Now, the ratio of M&Ms to Skittles in the candy mix is 2 : 3. Find the original amount, x, of each type of candy.

You Try 7 Ms. Martin mixed up her crayons and colored pencils. The mix started with x of each type of writing utensils, but Ms. Draper added 5 crayons and Ms. Adams borrowed 10 colored pencils. Now, the ratio of crayons to colored pencils is 4 : 3. Find the original amount, x, of each type of writing utensil.

More Examples

Remember to solve proportion problems: cross multiply, simplify, and then solve.

Examples:	$\frac{x-7}{8}=\frac{3}{4}$ $4(x-7)=24$ $4x-28=24$ $+28\quad+28$ $4x=52$ $\frac{4x}{4}=\frac{52}{4}$ $x=13$	$\frac{2x}{5}=\frac{5x+1}{100}$ $100\cdot 2x=5(5x+1)$ $200x=25x+5$ $175x=5$ $x=1/35$	$\frac{3x-2}{x+5}=\frac{4}{3}$ $3(3x-2)=4(x+5)$ $9x-6=4x+20$ $-4x\quad\quad-4x$ $5x-6=20$ $+6\quad+6$ $5x=26$ $x=5\,1/5$