Solving Equations Using Ratio and Proportion

Quick Review	
A *ratio* is a fraction	$\frac{a}{b}$
A *proportion* is an equation that sets two ratios equal to each other.	$\frac{a}{b}=\frac{c}{d}$
Solve a proportion by multiplying both sides of the equation by the common denominator of *b* and *d*.	**Example:** Solve $\frac{3x}{5}=\frac{x+16}{7}$. **solution:** $35\left(\frac{3x}{5}\right)=\left(\frac{x+16}{7}\right)35$ $21x=5x+80$ $16x=80$ **and** $x = 5$

Problems

Solve each of the following proportions

1. $\frac{x}{12}=\frac{3}{4}$

2. $\frac{2}{16}=\frac{x+3}{8}$

3. $\frac{5}{x}=\frac{15}{8}$

4. $\frac{x-2}{2}=\frac{3-x}{3}$

5. $\frac{4x-7}{13}=\frac{3-2x}{-7}$

6. $\frac{14}{3x}=\frac{3}{x+1}$

7. $\frac{5x}{-12}=\frac{1-x}{4}$

8. $\frac{x+1}{x+2}=\frac{x+3}{x+1}$

9. Solve for p: $\frac{3}{4}=\frac{r+p}{2p}$

10. Solve for a: $\frac{a+b}{b}=\frac{a-b}{2b}$