Name _____ Date _____

Ratios and Proportions

Proportions

Solve the following ratio for *x*.

$\frac{x}{5} = \frac{4}{10}$ → Take cross products and solve. → $5 \cdot 4 = 20$, $x \cdot 10 = 10x$

$10x = 20 \rightarrow \frac{10x}{10} = \frac{20}{10} \rightarrow x = 2$

Solve.

1. $\frac{4}{(x-3)} = \frac{28}{49}$ $196 = 28x - 84$, $112 = 28x$, $x = 4$

2. $\frac{(5+x)}{10} = \frac{2}{5}$ $25 + 5x = 20$, $5x = -5$, $x = -1$

3. $\frac{x}{30} = \frac{7}{10}$ $10x = 210$, $x = 21$

4. $\frac{(x-2)}{16} = \frac{x}{4}$ $4x - 8 = 16x$, $-8 = 12x$, $x = -\frac{2}{3}$, $= \frac{-8}{12} = x$

5. $\frac{2}{x} = \frac{6}{30}$ $6x = 60$, $x = 10$

6. $\frac{(x+1)}{7} = \frac{6}{14}$ $14x + 14 = 42$, $14x = 28$, $x = 2$

7. $\frac{x}{15} = \frac{5}{75}$ $75x = 75$, $x = 1$

8. $\frac{x}{20} = \frac{2}{10}$ $10x = 40$, $x = 4$

9. $\frac{x}{6} = \frac{(x-3)}{12}$ $12x = 6x - 18$, $6x = -18$, $x = -3$

10. $\frac{x}{5} = \frac{12}{6}$ $6x = 60$, $x = 10$

11. $\frac{6}{(x+5)} = \frac{18}{24}$ $144 = 18x + 90$, $54 = 18x$, $3 = x$

12. $\frac{5}{15} = \frac{x}{9}$ $45 = 15x$, $3 = x$

13. $\frac{x+x}{10} = \frac{5}{2}$ $2x + 2x = 50$, $4x = 50$, $x = \frac{50}{4} = 12.5$

14. $\frac{x}{3} = \frac{12}{27}$ $27x = 36$, $x = 1\frac{4}{3}$