Solving Proportions

| Solve the

Solve the following proportions.

1.
$$\frac{3}{4} \times \frac{x}{8}$$

$$\frac{2}{5} = \frac{8}{x}$$

$$\frac{3}{4}$$
 $\times \frac{x}{8}$ 2. $\frac{2}{5} = \frac{8}{x}$ 3. $\frac{x}{6}$ $\times \frac{10}{3}$ 4. $\frac{3}{x}$ $\times \frac{9}{5}$

4.
$$\frac{3}{r} \times \frac{9}{5}$$

$$\frac{24 = 4x}{4}$$

$$\begin{array}{c}
3x = 6 \\
\hline
3 \\
X = 20
\end{array}$$

$$\frac{15}{9} = \frac{9}{9}$$

Solve the following proportions.

$$\frac{3}{4} = \frac{x-2}{8}$$

1.
$$\frac{3}{4} \times \frac{x-2}{8}$$
3(8) = $4(x-2)$

3.
$$\frac{1}{3} = \frac{1}{3}$$

$$27 = 6x - 9$$

$$+ 9 = +9$$

$$36 = 6x$$

$$6$$

$$6$$

$$X = 6$$

2.
$$\frac{2}{5} \frac{8}{(x-4)}$$

 $2(x-4) = 5(8)$
 $2x-8 = 40$
 $+8$
 $+8$
 $-2x=48$

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

$$\begin{array}{ccc}
20 = 6x - 4 \\
+4 & \\
24 = 6x \\
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Solve the following proportions.

$$1. \qquad \frac{3x}{4} > \frac{x-5}{3}$$

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

$$\frac{9x = 4x - 20}{-4x} - \frac{-4x}{5} = \frac{-20}{5} = \frac{-4}{5}$$

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

4.
$$\frac{4}{3x-20} = \frac{2}{5x}$$

Solve the following proportions.

$$1. \qquad \frac{3x+1}{x-5} \swarrow \frac{4}{3}$$

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

$$4x-20 = 9x+3$$

 $-4x$

$$4x-20 = 9x+3
-4x
-4x
-20 = 5x+3
-3 -3
-3 -3
-3 -3
-3 -3
-3 -3
-3 -4.6
5 5 5 x -23 = -4.6$$

3.
$$\frac{4x-3}{5x+2} = \frac{2}{3}$$
 4. $\frac{4x+1}{3x-20} = \frac{2}{5}$

4.
$$\frac{4x+1}{3x-20} = \frac{2}{5}$$

Page

Set up a proportion to solve each problem, show all work, and label all answers.

1. The ratio of boys to girls is 4 to 3. If there are 36 boys, how many girls are there?

boys
girls
$$\frac{4}{3}$$
 $\frac{36}{x}$
 $\frac{4}{4}$ $\frac{108}{4}$
 $\frac{4}{4}$ $\frac{4}{4}$

2. At a recent party, it cost \$11.50 for refreshments for 6 guests. At this rate, how much would it cost to have refreshments for 80 guests?

$$\frac{9uets}{9uests} \frac{80}{6} = \frac{x}{11.50}$$

Money
$$\frac{411.50}{6} = \frac{x}{80}$$

$$\frac{6x}{6} = \frac{920}{6} = \frac{x}{150.33}$$

3. Mr. Johnson was paid \$2250 for a job that required 30 hours of work.

At this rate, how much should he be paid for a job requiring 45 hours of work?

$$\frac{4}{hr} = \frac{2250}{30} - \frac{x}{45}$$

$$\frac{30}{45} = \frac{2250}{x}$$

$$\frac{30}{30} = \frac{101250}{30}$$

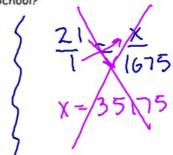
$$\frac{30}{30} = \frac{30}{30}$$

$$\frac{30}{30} = \frac{30}{30}$$



5. Central High School has 1675 students. The student to teacher ratio is 21 to 1. How many teachers are at Central High School?

$$\frac{21}{1}=\frac{1679}{X}$$



6. A recipe calls for $2\frac{3}{4}$ cups of flour to make 2 dozen cookies. How many cups of flour would be required to bake 11 dozen cookies?

$$\frac{2^{\frac{3}{4}}}{2} = \frac{x}{11}$$