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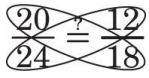
Solve Proportional Relationships ~ L1-6

A **proportion** is an equation that states that two ratios are equivalent. To determine whether a pair of ratios forms a proportion, use cross products. You can also use cross products to solve proportions.

Example 1

Determine whether the pair of ratios $\frac{20}{24}$ and $\frac{12}{18}$ form a proportion.

Find the cross products.



Since the cross products are

_____, the ratios

_____ form a proportion.

Example 2

Solve $\frac{12}{30} = \frac{k}{70}$.

- Write the equation.
- Find the cross products.
- Multiply.
- Divide each side by the Coefficient.
- Simplify.

The solution is _____.

Example 3

At space camp, you can sit in a chair that simulates the force of gravity on the moon. A person who weighs 105 pounds on Earth would weigh 17.5 pounds on the moon. How much would a 60 pound dog weigh on the moon?

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YOUR TURN

Determine whether each pair of ratios forms a proportion. Write yes or no.

1. $\frac{17}{10}, \frac{12}{5}$	**2.** $\frac{6}{9}, \frac{12}{18}$	**3.** $\frac{8}{12}, \frac{10}{15}$
4. $\frac{7}{15}, \frac{12}{32}$	**5.** $\frac{7}{9}, \frac{49}{63}$	**6.** $\frac{8}{24}, \frac{12}{28}$

Solve each proportion.

10. $\frac{x}{5} = \frac{12}{25}$	**11.** $\frac{3}{4} = \frac{12}{c}$	**12.** $\frac{6}{9} = \frac{10}{r}$
13. $\frac{16}{24} = \frac{z}{15}$	**14.** $\frac{w}{6} = \frac{2.8}{7}$	**15.** $\frac{5}{y} = \frac{7}{16.8}$