**Full Name:** _____ **Date:** _____

# Solving proportional equations

| Ratio | Proportions |
|---|---|
| • A ratio uses _____ to compare two quantities.<br>• There are THREE ways to write the ratio of two quantities a and b, when b≠0:<br>(1) a ___ b<br>(2) a ___ b<br>(3) $\frac{a}{b}$.<br>• Ratios are read "the ratio of a to b" no matter which way it is written.<br>• Ratios should always be written as _____ in simplest form. | A proportion is an equation that states two _____ are equivalent:<br>$\frac{a}{b} = \frac{c}{d}, where\ b \neq 0\ and\ d \neq 0$ |

* Solving proportional equations using **cross product**.

- A cross product is the _____ of the _____ of one ratio and _____ of the other ration.
- The **cross product** of proportions are _____.

**Examples of solving proportional equations.**

(1) Solve $\frac{8}{x} = \frac{6}{15}$.

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



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# DO NOW!

**Use Cross Product property to solve for $x$.**

(1) $\frac{10}{8} = \frac{x}{10}$

solution:

(2) $\frac{7}{5} = \frac{x}{3}$

solution:

(3) $\frac{7}{x} = \frac{8}{7}$

solution:

(4) $\frac{4}{3} = \frac{8}{x}$

solution:

(5) $\frac{7}{x+5} = \frac{10}{5}$

solution:

(6) $\frac{6}{x-1} = \frac{9}{7}$

solution:

(7) $\frac{5}{6} = \frac{7x+9}{9}$

solution:

(8) $\frac{7}{9} = \frac{x}{x-10}$

solution:

(9) $\frac{9}{x-7} = \frac{6}{x}$

solution:

(10) $\frac{x}{5} = \frac{x-6}{4}$

solution:

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