**7.3**

**Name (print first and last)** _____ **Per**_____ **Date:** 3/5 due 3/6

**7.3 Similarity: Solving Proportions** **Geometry Regents 2013-2014 Ms. Lomac**

SLO: I can solve proportions.

Proportional Equal Ratio Multiply

☐ (1) Since we know that the ratios of corresponding sides are equal, we will be writing equations in which one ratio is equal to another. These are proportions. If one part of the proportion we write is a variable, we will need to be able to solve the proportion for the variable. Briefly describe what is done in each step of the example.

**Solving Proportions Example**

$\frac{12}{x-2} = \frac{32}{x+8}$ }⇨ _____

$32(x-2) = 12(x+8)$ }⇨ _____

$32x - 64 = 12x + 96$ }⇨ _____

$\frac{-12x + 64}{20x} = \frac{-12x + 64}{160}$ }⇨ _____

$\frac{20x}{20} = \frac{160}{20}$ }⇨ _____

$x = 8$ }⇨ _____

**Check**

$\frac{12}{x-2} = \frac{32}{x+8}$

$\frac{12}{\mathbf{8}-2} \stackrel{?}{=} \frac{32}{\mathbf{8}+8}$

$\frac{12}{6} \stackrel{?}{=} \frac{32}{16}$

$2 = 2$ ✔

☐ (2) Solve each proportion below using the examples above

☐ (a) $\frac{x}{64} = \frac{-9}{16}$ ☐ (b) $\frac{27}{x} = \frac{9}{4}$ ☐ (c) $\frac{3}{x} = \frac{15}{25}$ ☐ (d) $\frac{-7}{5} = \frac{91}{x}$

☐ (e) $\frac{3x}{8} = \frac{5}{12}$ ☐ (f) $\frac{x+2}{3} = \frac{4}{5}$ ☐ (g) $\frac{7}{8} = \frac{b}{b+8}$ ☐ (h) $\frac{9}{7} = \frac{n+10}{n-6}$

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☐ (i) $\frac{x+9}{2} = \frac{x}{6}$

☐ (j) $\frac{4}{r-8} = \frac{10}{r}$

☐ (k) $\frac{8}{x+8} = \frac{9}{x-3}$

☐ (l) $\frac{x+7}{-4} = \frac{x-12}{6}$

☐ (m) $\frac{m-9}{8} = \frac{m}{10}$

☐ (n) $\frac{2}{x+1} = \frac{3}{2x+3}$

☐ (o) $\frac{16x}{x-2} = 8$

☐ (p) Tricky, involves FOIL

$\frac{x+1}{x} = \frac{x}{x+2}$

☐ (q) Tricky, solve quadratic

$\frac{-2x}{5} = \frac{2}{x+6}$