

Name:

Key

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Date:

### Geometry PC Review 8.0-8.4

Solve each proportion.

1.  $\frac{16}{3} = \frac{20}{t+1}$

$16(t+1) = 60$   
 $16t + 16 = 60$   
 $16t = 44$

$t = \frac{11}{4}$  or  $2.75$

2.  $\frac{s-2}{4} = \frac{9}{s-2}$

$\sqrt{(s-2)^2} = \sqrt{36}$   
 $s-2 = \pm 6$   
 $+2 \quad +2$

$s = 2+6$  and  $2-6$   
 $s = 8, -4$

3.  $\frac{2}{3y} = \frac{y}{24}$

$\frac{48}{3} = \frac{3y^2}{3}$   $\sqrt{y^2} = \sqrt{16}$

$y = \pm 4$

4. An architect's model for a building is 1.4 m long and 0.8 m wide. The actual building is 240 m wide. What is the length of the building?

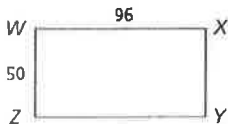
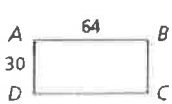
$\frac{1.4}{0.8} = \frac{x}{240}$

$0.8x = 336$

$x = 420 \text{ m}$

Determine if the two polygons are similar. If so, write a similarity ratio and a similarity statement.

5. Rectangles ABCD and WXYZ

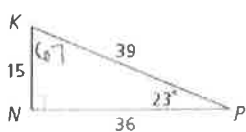
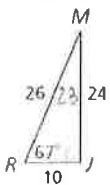


$\frac{30}{50} = \frac{3}{5}$

$\frac{64}{96} = \frac{2}{3}$

not similar

6.  $\triangle JMR$  and  $\triangle KNP$



yes by AA

$\triangle JMR \sim \triangle NPK$

7. A geologist wants to measure the length XY of a rock formation. To do so, she locates points U, V, X, Y, and Z as shown. What is XY? How did you find it?

$\frac{35}{14} = \frac{5}{2}$

$\frac{25}{10} = \frac{5}{2}$

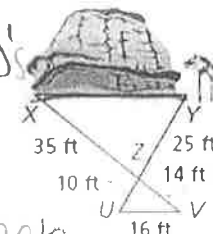
$\frac{25}{10} = \frac{x}{16}$

$10x = 400$

$x = 40 \text{ ft}$

Similar  $\Delta$ 's

SO prop. to each other



8. A building casts a 103 foot and 5 inch shadow at the same time a nearby flagpole casts a shadow that is 34 feet and 6 inches long. The flagpole is 32 feet tall. How tall is the building? (Reminder: 12 inches = 1 foot).

$$103\text{ft } 5\text{in} = 1241\text{in} \quad 103\frac{5}{12}\text{ft}$$

$$34\text{ft } 6\text{in} = 414\text{in} \quad 34\frac{1}{2}\text{ft}$$

$$32\text{ft} = 384\text{in}$$

$$\frac{103\frac{5}{12}}{34\frac{1}{2}} = \frac{x}{32}$$

$$34.5x = 3309\frac{1}{3}$$

$$x = 95.92\text{ft}$$

9. It is given that rectangle ABCD ~ EFGH. The area of rectangle ABCD is 135 in<sup>2</sup> and the area of rectangle EFGH is 240 in<sup>2</sup>. If the width of rectangle ABCD is 9 in., what is the length and width of rectangle EFGH?

$$\frac{135}{240} = \frac{9^2}{x^2}$$

$$135x^2 = 19,440$$

$$x^2 = 144$$

$$x = 12$$



$$w = 12\text{in}$$

$$l = 20\text{in}$$

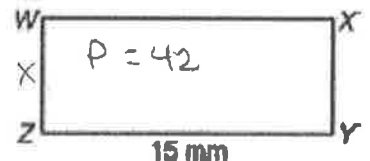
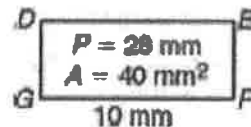
10. Given that DEFG ~ WXYZ, find the following:

- a. perimeter of WXYZ

$$\frac{10}{15} = \frac{28}{x}$$

$$10x = 420$$

$$x = 42\text{mm}$$



- b. area of WXYZ

$$\frac{10^2}{15^2} = \frac{40}{x}$$

$$\frac{100}{225} = \frac{40}{x}$$

$$100x = 9000$$

$$x = 90\text{mm}^2$$

11. A free-fall ride at an amusement park casts a shadow  $43\frac{2}{3}$  ft long. At the same time, a 6-foot-tall person standing in line casts a shadow 2 feet long. What is the height of the ride?

$$\frac{x}{6} = \frac{43\frac{2}{3}}{2}$$

$$2x = 262$$

$$x = 131\text{ft}$$

12. Two similar figures have areas of 98 m<sup>2</sup> and 72 m<sup>2</sup>. Find the ratio of their perimeters.

$$\sqrt{98} = 7\sqrt{2}$$

$$\sqrt{72} = 6\sqrt{2}$$

$$\frac{7\sqrt{2}}{6\sqrt{2}} = \frac{7}{6}$$

## Simplifying Radicals Review

Date \_\_\_\_\_ Period \_\_\_\_\_

**Simplify.**

$$1) \frac{10\sqrt{14}}{\sqrt{42}}$$

$$\frac{10\sqrt{3}}{3}$$

$$2) \frac{9\sqrt{2}}{\sqrt{5}}$$

$$\frac{9\sqrt{10}}{5}$$

$$3) \frac{\sqrt{48}}{10\sqrt{66}}$$

$$\frac{\sqrt{22}}{55}$$

$$4) \frac{5\sqrt{3}}{\sqrt{8}}$$

$$\frac{5\sqrt{6}}{4}$$

$$5) -\frac{10}{4\sqrt{10}}$$

$$-\frac{\sqrt{10}}{4}$$

$$6) \frac{11\sqrt{11}}{\sqrt{5}}$$

$$\frac{11\sqrt{55}}{5}$$

$$7) 3\sqrt{6} - 2\sqrt{18} - 3\sqrt{24}$$

$$-3\sqrt{6} - 6\sqrt{2}$$

$$8) 3\sqrt{18} - 3\sqrt{3} - \sqrt{8}$$

$$7\sqrt{2} - 3\sqrt{3}$$

$$9) 2\sqrt{2} - \sqrt{2} - 2\sqrt{3}$$

$$\sqrt{2} - 2\sqrt{3}$$

$$10) 2\sqrt{24} + 3\sqrt{6} - 2\sqrt{6}$$

$$5\sqrt{6}$$

$$11) -4\sqrt{320n^3}$$

$$-32n\sqrt{5n}$$

$$12) -4\sqrt{384n^2}$$

$$-32n\sqrt{6}$$

$$13) -3\sqrt{200a^2}$$

$$-30a\sqrt{2}$$

$$14) 3\sqrt{256x^3}$$

$$48x\sqrt{x}$$