

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Similarity Review Sheet**

1. Given  $\overline{BD} \parallel \overline{AE}$ , find DE and CE.

$$\frac{4}{10} = \frac{6}{x}$$

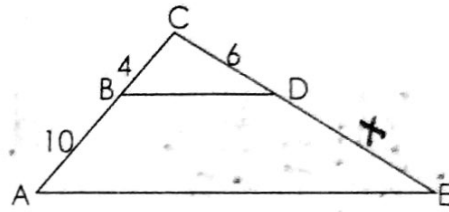
$$60 = 4x$$

$$\boxed{x = 15}$$

$$\boxed{DE = 15}$$

$$CE = 15 + 6$$

$$= \boxed{21}$$



A model of a building has a scale of 2 in to 15 ft.

2. If the model is 5 in tall, how tall is the actual building?

$$\frac{\text{in}}{\text{ft}} \quad \frac{2}{15} = \frac{5}{x} \quad 75 = 2x \quad \boxed{x = 37.5 \text{ ft}}$$

In the diagram,  $\triangle CAT \sim \triangle DOG$ . Use the diagram to find each of the following.

3. Scale factor of  $\triangle CAT$  to  $\triangle DOG$  (Simplify if necessary)

$$k = \frac{12}{8} = \boxed{\frac{3}{2}}$$

4. Find x and y (Show Work!)

$$\frac{6}{x} = \frac{8}{12}$$

$$8x = 72$$

$$\boxed{x = 9}$$

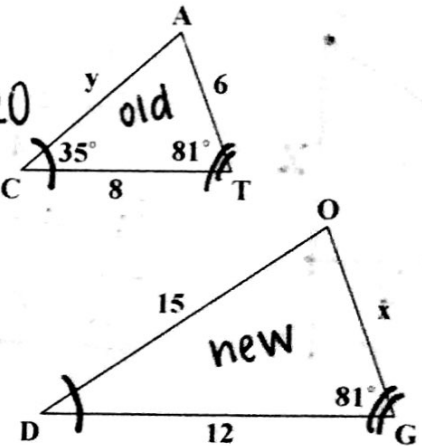
$$\frac{y}{16} = \frac{8}{12}$$

$$12y = 120$$

$$\boxed{y = 10}$$

$$x = \underline{9}$$

$$y = \underline{10}$$



5. Find  $m\angle D = \underline{35}^\circ$

6. Find  $m\angle O = \underline{64}^\circ$

$$10 + 6 + 8 =$$

7. Find the perimeter of  $\triangle CAT = \underline{24}$  (old)

Find the perimeter of  $\triangle DOG = \underline{36}$  (new)

8. What is the ratio (scale factor) of the perimeter of  $\triangle CAT$  to the perimeter of  $\triangle DOG$ ?

$$\frac{36}{24} = \boxed{\frac{3}{2}}$$

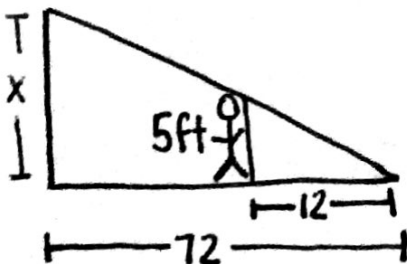
\* Notice perimeter has same scale factor

9. A boy who is 5 ft. tall cast a shadow that is 12 ft long. At the same time, a building nearby cast a shadow that is 72 ft long. How tall is the building? Draw a picture!

$$\frac{5}{12} = \frac{x}{72}$$

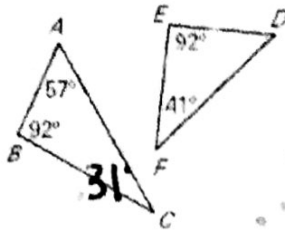
$$12x = 360$$

$$\boxed{x = 30 \text{ ft}}$$

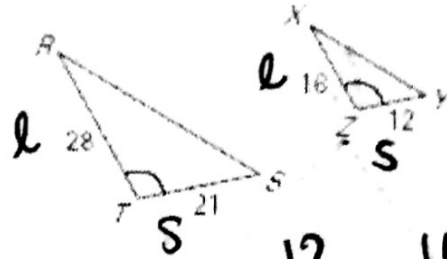


Explain why the triangles are similar and write a similarity statement.

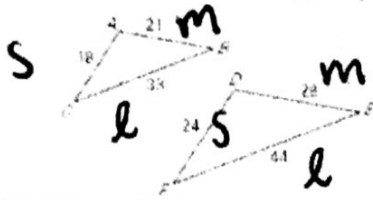
10.  $\triangle ABC \sim$  not  $\sim$  by \_\_\_\_\_



11.  $\triangle RST \sim \triangle XYZ$  by SAS  $\sim$



12.  $\triangle ABC \sim \triangle DEF$  by SSS  $\sim$



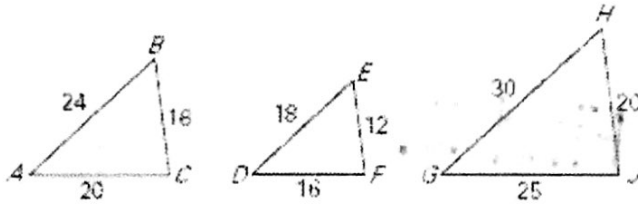
$$\frac{18}{24} = \frac{21}{28} = \frac{33}{44}$$

$$3/4 = 3/4 = 3/4 \checkmark$$

$$\frac{12}{21} = \frac{16}{28}$$

$$.57 = .57 \checkmark$$

Determine which of the triangles ( $\triangle DEF$  or  $\triangle GHJ$ ) is similar to  $\triangle ABC$ :



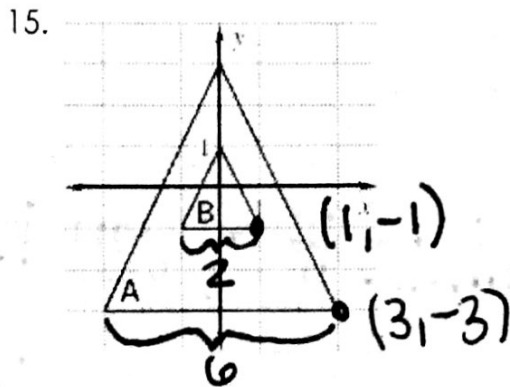
$$\triangle DEF: \frac{16}{12} \neq \frac{20}{16} \neq \frac{24}{18} \times$$

$$\triangle GHJ: \frac{16}{20} = \frac{20}{25} = \frac{24}{30} \checkmark$$

13. Complete the Similarity Statement to  $\triangle ABC \sim \triangle$  GHJ

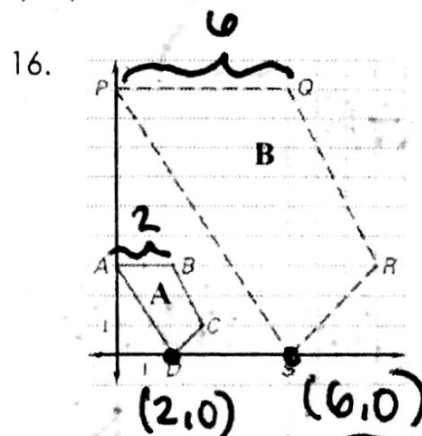
14. Find the Scale Factor from  $\triangle ABC$  to your answer from #13. = 5/4

Determine whether the dilation from Figure A to Figure B is a reduction or an enlargement. Then find its scale factor and simplify if possible.



Reduction or enlargement?

scale factor = 1/3

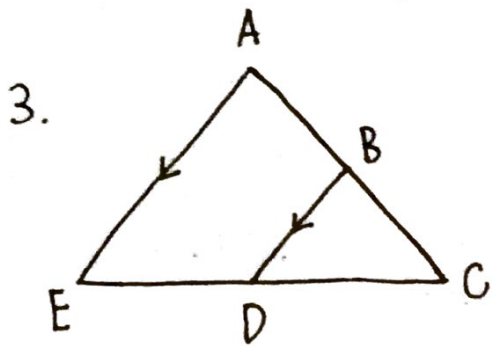


Reduction or enlargement?

scale factor = 3

1. In similar polygons, sides are proportional and angles are congruent.

2. The three ways to prove similarity are AA~, SAS~, and SSS~.



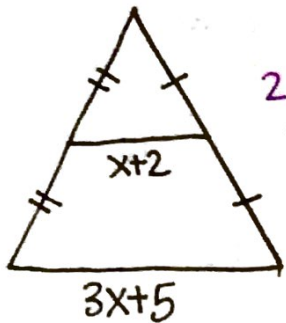
a.  $\frac{CB}{BA} = \frac{CD}{DE}$

b.  $\frac{CB}{CA} = \frac{BD}{AE}$

c.  $\frac{BA}{CA} = \frac{DE}{CE}$

d.  $\frac{CB}{CA} = \frac{CD}{CE}$

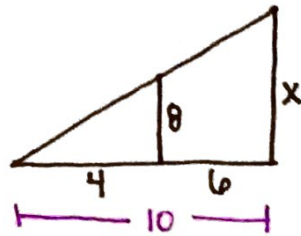
4. Find x.



$2(x+2) = 3x+5$   
 $2x+4 = 3x+5$

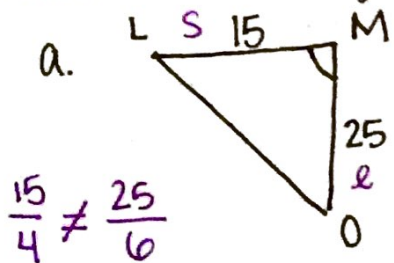
$x = -1$

5. These triangles are similar. Find the missing side.



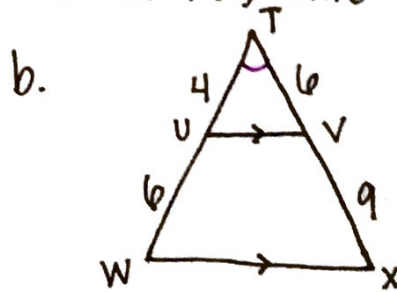
$\frac{8}{4} = \frac{x}{10}$   
 $4x = 80$   
 $x = 20$

b. Decide if the triangles are similar. If so, say how. If not, write NOT~.



$\frac{15}{4} \neq \frac{25}{6}$

$\triangle LMO \sim \triangle NRS$  by not~



$\frac{4}{6} = \frac{6}{9}$   
 $\frac{2}{3} = \frac{2}{3}$  ✓ sides prop.  
 $\angle T \cong \angle T$  ✓

$\triangle TVW \sim \triangle TWX$  by SAS~