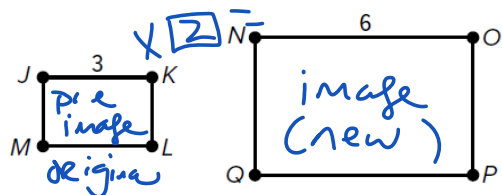


Module 8 Similarity

Sunday, April 2, 2023 5:41 PM

- Use the figure to complete the statement.



The transformation from rectangle $JKLM$ to rectangle $NOPQ$ is a(n)

[A. enlargement B. reduction]

with a scale factor of

[A. 0.5 B. 2 C. 3].

- If the point $P(4, 6)$ is dilated with a center of dilation at the origin and $k = \frac{3}{2}$ then where is P' ?

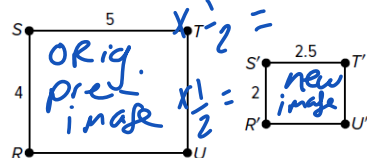
pre image (orig) $4 \times 1.5 = 6$
 $6 \times 1.5 = 9$
 enlargement 1.5
 Scale factor (6, 9)
 New image

- If after a dilation T' is at $(-4, 28)$ and T was at $(-1, 7)$ then what was the value of k ?

enlargement
 new image $28 = 4 \times 7$ pre-image original
 $-4 = 4 \times -1$

Scale factor 4

- A dilation maps rectangle $RSTU$ onto rectangle $R'S'T'U'$.



Reduction (fraction)

$$\frac{2}{4} = \frac{1}{2}$$

$$\frac{2.5}{5} = \frac{1}{2}$$

What is the similarity ratio of the dilation?

A. $\frac{1}{2}$

B. 2

C. $\frac{5}{4}$

D. $\frac{4}{5}$

new
original

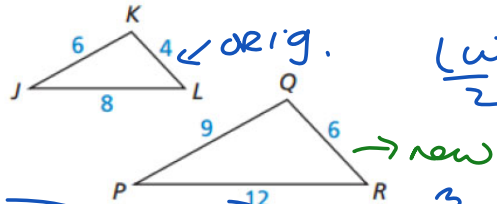
Refer to the figure at the right.

Write your answer in simplified fraction form.

$$\frac{3}{2} = 1.5$$

5. Find the scale factor of $\triangle JKL$ to $\triangle PQR$.

6. Find the ratio of the areas of $\triangle JKL$ to $\triangle PQR$.



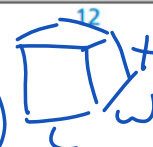
9 new
6 original

$$\frac{LW}{2}$$

$$\left(\frac{3}{2}\right)^2 = \left(\frac{9}{4}\right)$$

$$(1.5)^2 = 2.25$$

Volume
3D



$$\left(\frac{3}{2}\right)^3 = \frac{27}{8}$$

$$(1.5)^3 = 3.375$$

Refer to the diagram at the right.

7. Find the value of x.

$$\frac{5x}{5} = \frac{180}{5}$$

$$x = 36$$

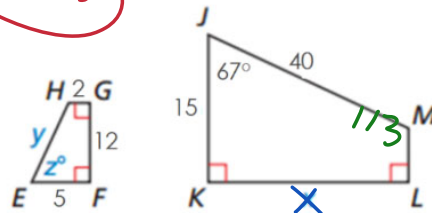
8. Find the value of z.

$$\angle E = \angle J$$

$$67^\circ$$

$$\angle M = \angle H$$

$$113^\circ$$



$$\frac{15y}{15} = \frac{200}{15}$$

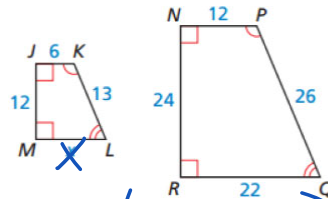
$$y = 13\frac{1}{3}$$

$$90 + 90 + 67 = 247$$

$$\frac{360}{113}$$

Each pair of polygons are similar. Find the value of the missing variable.

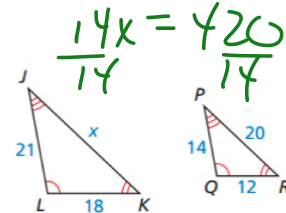
9.



$$\frac{24x}{24} = \frac{264}{24}$$

$$x = 11$$

10.



$$14x = 420$$

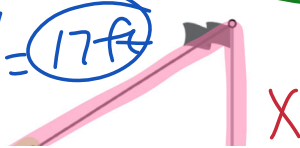
$$\frac{14x}{14} = \frac{420}{14}$$

$$x = 30$$

$$\frac{20}{20} = \frac{21}{14}$$

11.) SHADOWS Jeremy stands so that his shadow and the shadow cast by a flag pole end at the same point. If Jeremy is exactly 68 inches tall, what is the height of the flagpole in feet?

$$\frac{204}{12} = 17$$



$\frac{96}{96} = \frac{X}{288}$ feet
 $\frac{X}{288} = \frac{68}{96}$
 $X = 204$

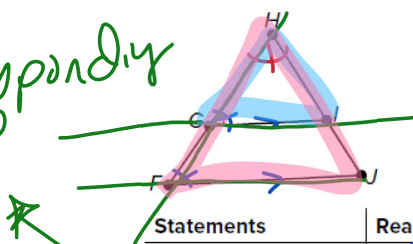
12.)

Match the reasons to each statement to complete the proof.

Given: $\angle HGI \cong \angle HFJ$

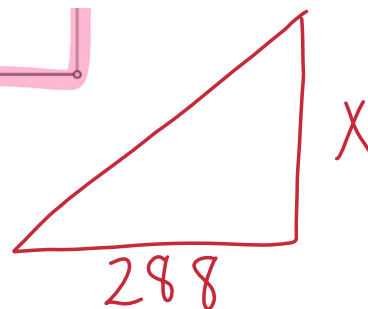
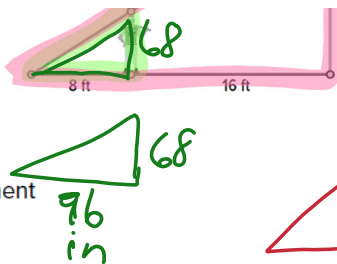
Prove: $\triangle FHJ \sim \triangle GHI$

corresponding angles

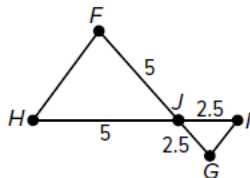


Statements	Reasons
1. $\angle HGI \cong \angle HFJ$	1. Given
2. $\angle GHI \cong \angle FHJ$	2. Reflexive
3. $\triangle FHJ \sim \triangle GHI$	3. AA

- A. Third Angles Theorem
- B. Transitive Property of Congruence
- C. Given
- D. AA Similarity Postulate
- E. Reflexive Property of Congruence

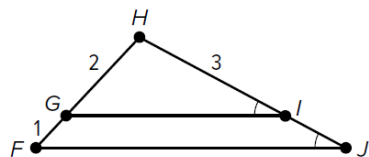


13.) Which reason proves that $\triangle FHJ \sim \triangle GIJ$?



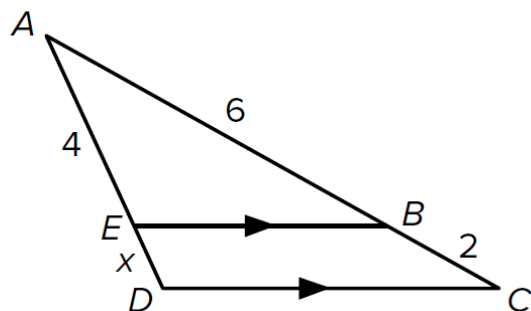
- A. AA Similarity Postulate
- B. SAS Similarity Theorem
- C. SSS Similarity Theorem

- 14.) What is the length of \overline{HJ} ?



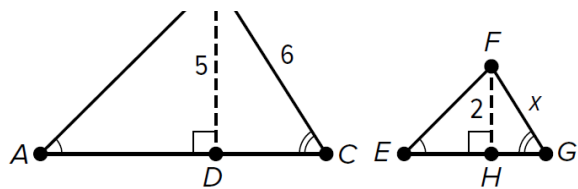
$HJ = \underline{\hspace{2cm}}$

15. Find the value of x .



- 16.) Which equation can be used to find the value of x ?





- A. $\frac{x}{6} = \frac{2}{5}$
- B. $\frac{x}{6} = \frac{5}{2}$
- C. $\frac{x}{5} = \frac{6}{2}$
- D. $\frac{x}{5} = \frac{2}{6}$