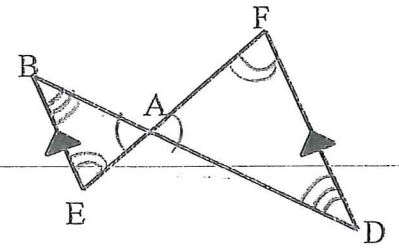
AA~, SSS~, or SAS~

Determine if each of the following sets of triangles are similar. If so, state which similarity conjecture is used to prove the triangle similar and write a similarity statement.

1.

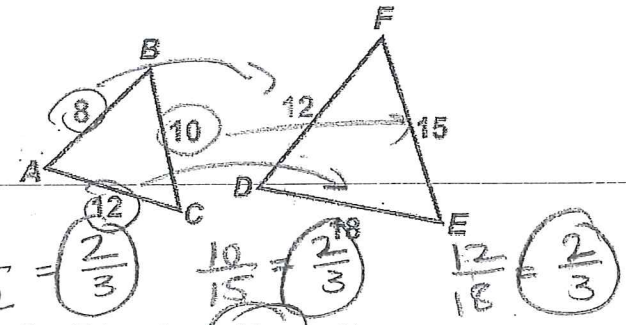


Similar Triangles? Yes or No

Similarity Conjecture: AA~

Similarity Statement: $\triangle AEB \sim \triangle AFD$

2.



$\frac{8}{12} = \frac{2}{3}$ $\frac{10}{15} = \frac{2}{3}$ $\frac{12}{18} = \frac{2}{3}$

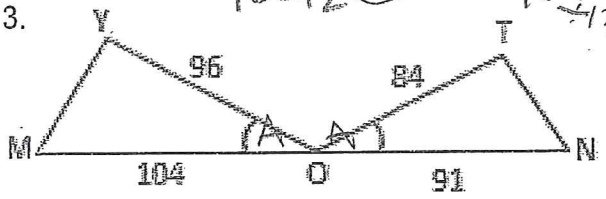
Similar Triangles? Yes or No

Similarity Conjecture: SSS~

Similarity Statement: $\triangle ABC \sim \triangle DFE$

$\frac{84}{96} \overset{\div 12}{=} \frac{7}{8}$ $\frac{91}{104} \overset{\div 13}{=} \frac{7}{8}$

3.

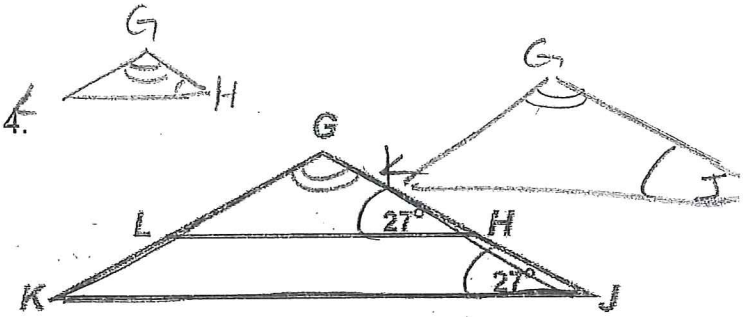


Similar Triangles? Yes or No

Similarity Conjecture: SAS~

Similarity Statement: $\triangle YOM \sim \triangle TON$

4.

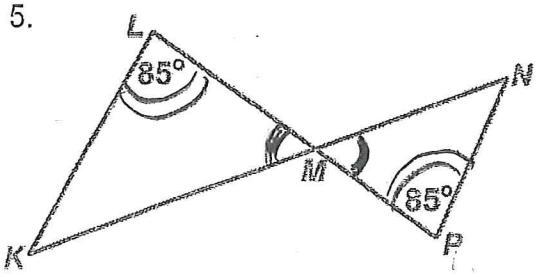


Similar Triangles? Yes or No

Similarity Conjecture: AA~

Similarity Statement: $\triangle LGH \sim \triangle KGJ$

5.

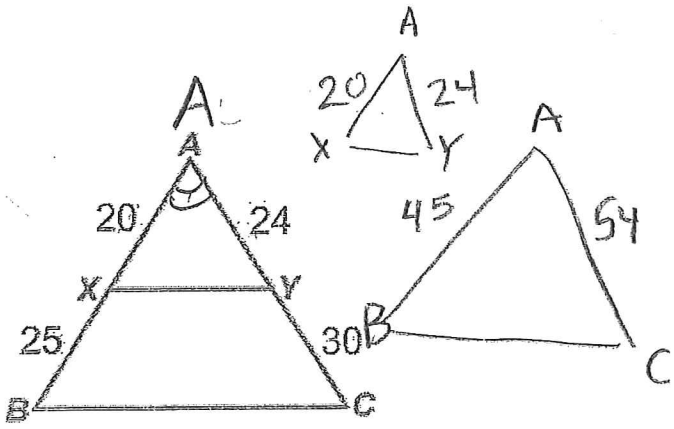


Similar Triangles? Yes or No

Similarity Conjecture: AA~

Similarity Statement: $\triangle MLK \sim \triangle MPN$

6.



$\frac{20}{45} = \frac{4}{9}$ $\frac{24}{54} = \frac{4}{9}$

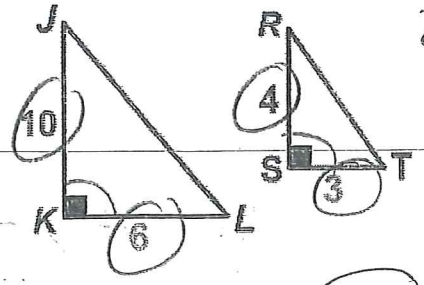
Similar Triangles? Yes or No

Similarity Conjecture: SAS~

Similarity Statement: $\triangle XAY \sim \triangle BAC$

Determine if each of the following sets of triangles are similar. If so, state which similarity conjecture is used t prove the triangle similar and write a similarity statement.

7.



$\frac{3}{6} = \frac{1}{2}$

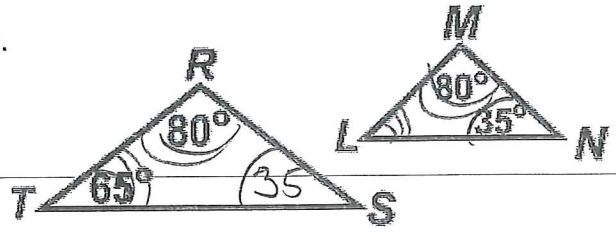
$\frac{4}{10} = \frac{2}{5}$

Similar Triangles? Yes or No

Similarity Conjecture:

Similarity Statement:

8.

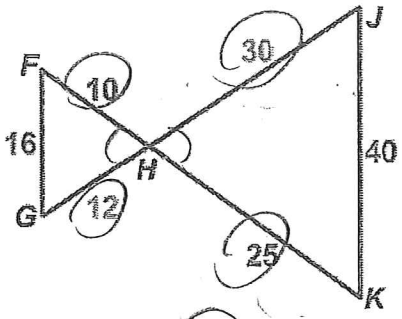


Similar Triangles? Yes or No

Similarity Conjecture: AA~

Similarity Statement: $\triangle SRT \sim \triangle NML$

9.



$\frac{30}{12} = \frac{5}{2}$

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

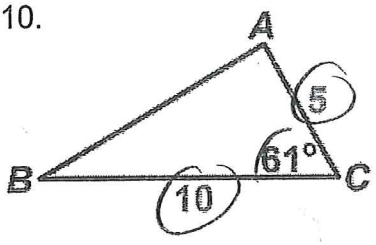
Similar Triangles? Yes or No

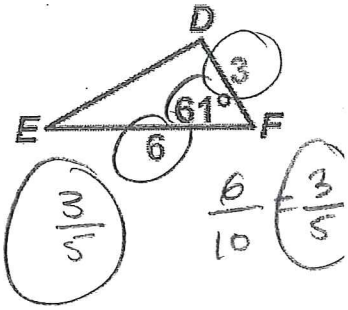
Similarity Conjecture: SAS~

Similarity Statement:

$\triangle GHF \sim \triangle JHK$

10.





$\frac{3}{5}$

$\frac{6}{10} = \frac{3}{5}$

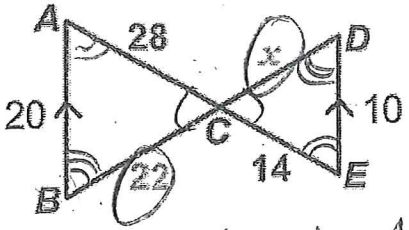
Similar Triangles? Yes or No

Similarity Conjecture: SAS~

Similarity Statement: $\triangle ACB \sim \triangle DFE$

Explain how the triangles are similar. Then find the value of *x*.

11.



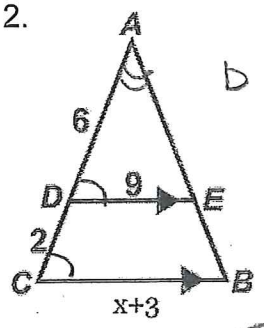
Similar by AA~

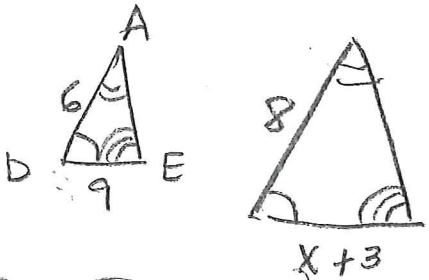
$\frac{x}{22} = \frac{10}{20}$

$\frac{20x}{20} = \frac{220}{20}$

$x = 11$

12.





$\frac{8}{6} = \frac{x+3}{9}$

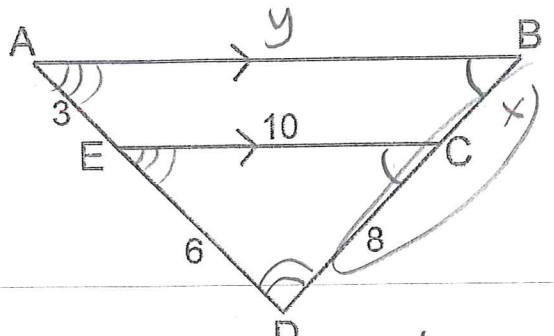
$6(x+3) = 8 \cdot 9$

$6x + 18 = 72$

$-18 \quad -18$

$\frac{6x}{6} = \frac{54}{6}$

$x = 9$

13. 

a. Explain why ΔABD and ΔECD are similar.

AA~

b. Solve for BC.

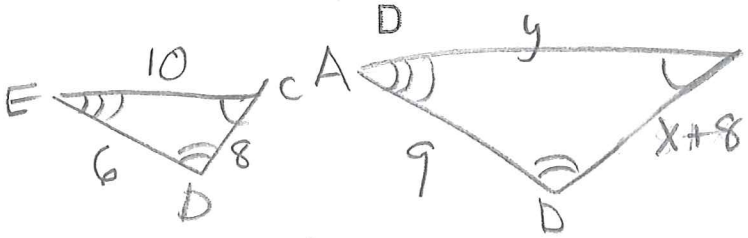
4

c. Solve for AB.

$\frac{10}{y} = \frac{6}{9}$

$\frac{90}{6} = \frac{6y}{6}$

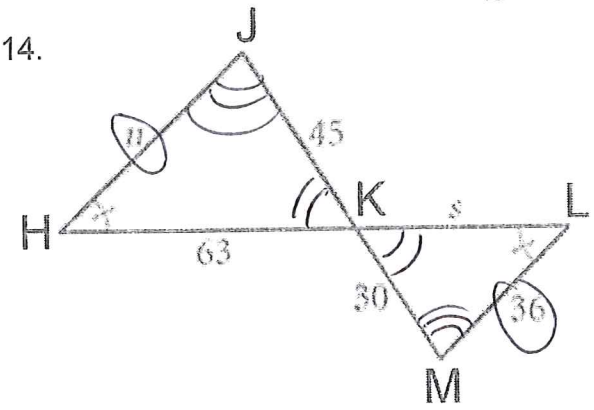
$y = 15$



$\frac{(x+8)}{8} = \frac{9}{6}$

$6(x+8) = 8 \cdot 9$

$6x + 48 = 72 \rightarrow \frac{6x}{6} = \frac{24}{6}$

14. 

a. Explain why the two triangles are similar.

AA~

b. Write a similarity statement for the two triangles.

$\Delta HKJ \sim \Delta LKM$

c. Solve for n.

$\frac{n}{36} = \frac{45}{30}$

$\frac{30n}{30} = \frac{1620}{30}$

$n = 54$

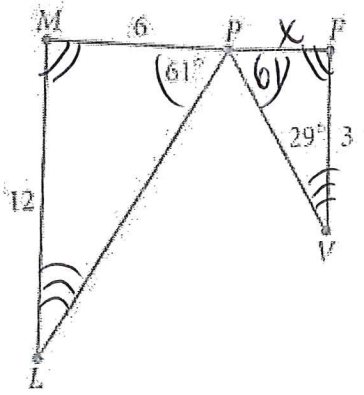
d. Solve for s.

$\frac{s}{63} = \frac{30}{45}$

$\frac{45s}{45} = \frac{1890}{45}$

$s = 42$

15. Suppose $\Delta MPL \sim \Delta FPV$.



$\frac{x}{6} = \frac{3}{12}$

$\frac{12x}{12} = \frac{18}{12}$

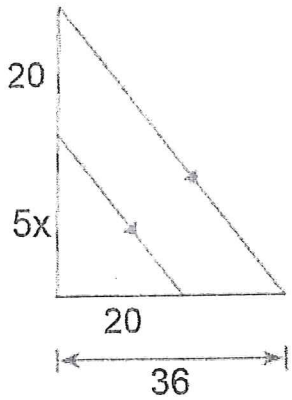
a. Find $m\angle F$.

90°

b. Find PF.

1.5

16. Solve for x.



$\frac{20}{5x} = \frac{36}{(20+5x)}$

$20(20+5x) = 180x$

$400 + 100x = 180x$

$-100x \quad -100x$

$\frac{400}{80} = \frac{80x}{80}$

$5 = x$