

1/21/20 - Warm Up Problem

Find the value of x and y .

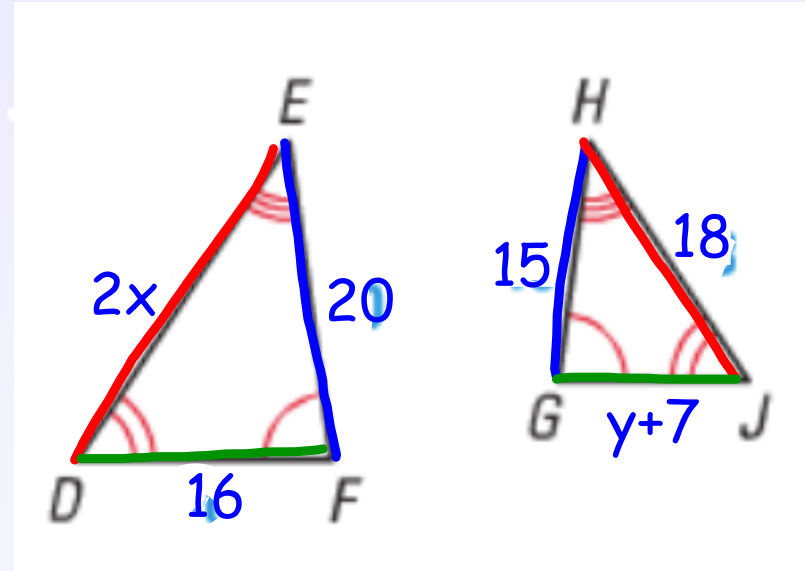
$$\frac{20}{15} = \frac{2x}{18} \quad x = 12$$

$$360 = 30x$$

$$\frac{20}{15} = \frac{16}{y+7} \quad y = 5$$

$$20y + 140 = 240$$

$$20y = 100$$

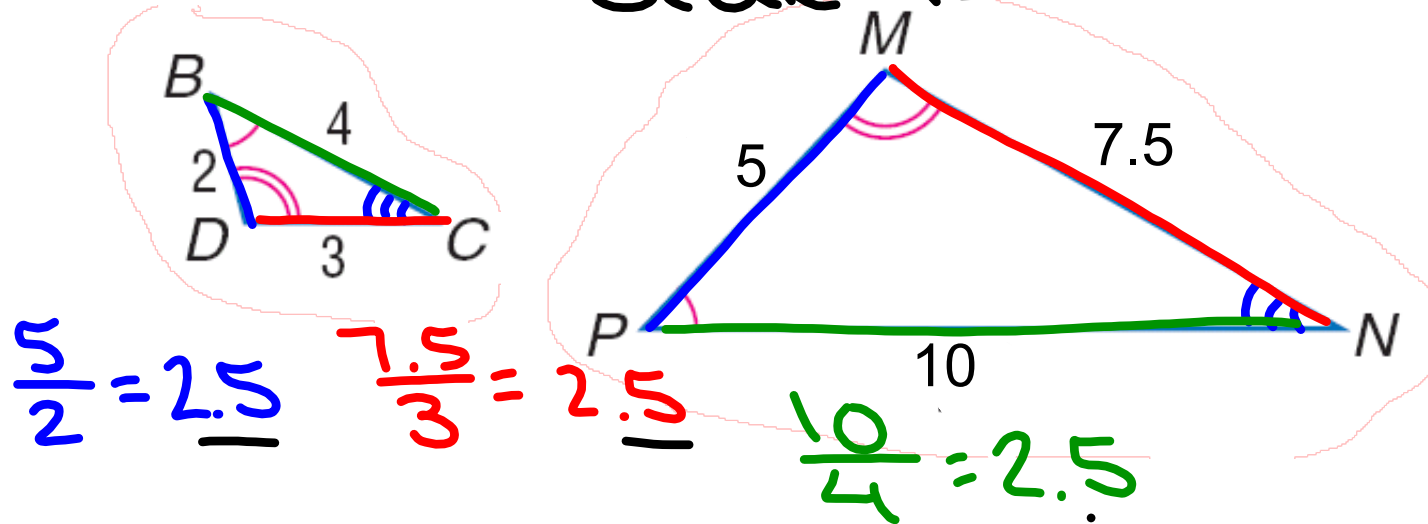


Section 7.3 - Proving Triangles Similar

Goals: Identify similar triangles
Use similar triangles to solve problems

Are these similar triangles?

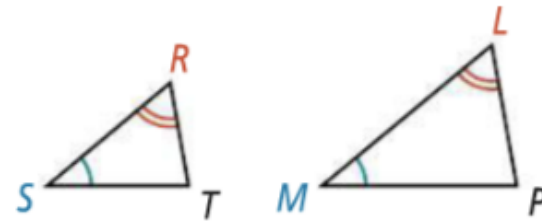
Similar Scale Factor = 2.5



Shortcuts for Determining if Triangles are Similar

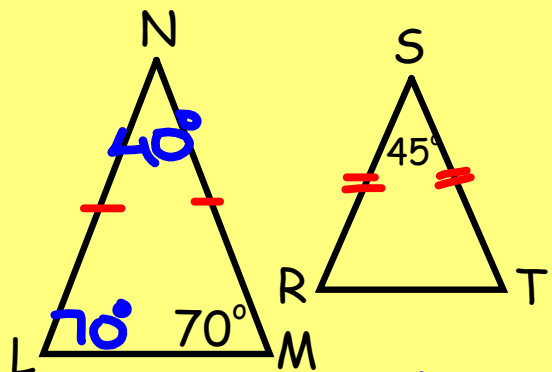
ANGLE-ANGLE SIMILARITY POSTULATE (AA~)

If two angles of one triangle are congruent to two angles of another triangle, then the triangles are similar.

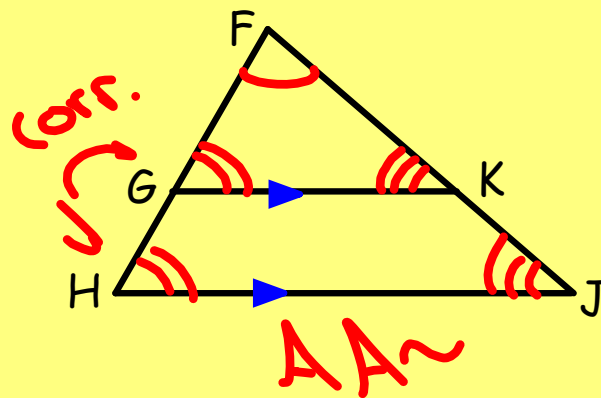


$\triangle SRT \sim \triangle MLP$
by AA~

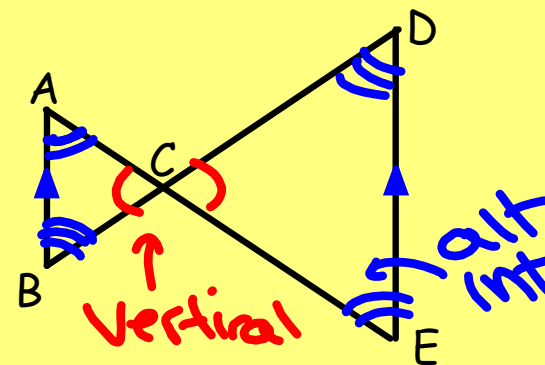
Are the triangles similar by AA?
 Explain why or why not.



Not Similar



corr.



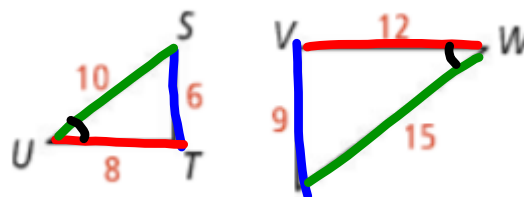
AA~

Shortcuts for Determining if Triangles are Similar

SIDE-SIDE-SIDE SIMILARITY THEOREM (SSS~)

If the corresponding sides of
two triangles are proportional,
then the triangles are similar.

$$\frac{6}{9} = \frac{2}{3} \quad \frac{8}{12} = \frac{2}{3} \quad \frac{10}{15} = \frac{2}{3}$$

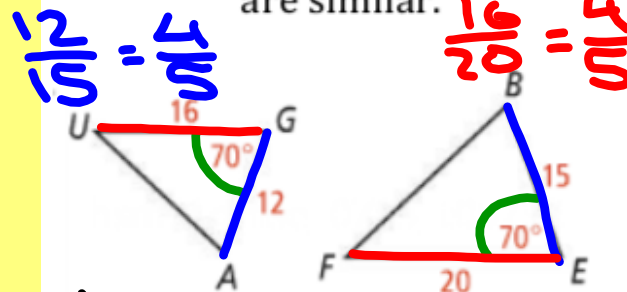


$\triangle UTS \sim \triangle VWX$
by SSS~

Shortcuts for Determining if Triangles are Similar

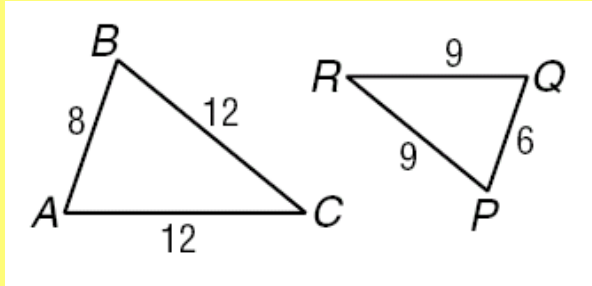
SIDE-ANGLE-SIDE SIMILARITY THEOREM (SAS~)

If one angle of one triangle is congruent to one angle of another triangle and the sides including those angles are proportional, then the triangles are similar.



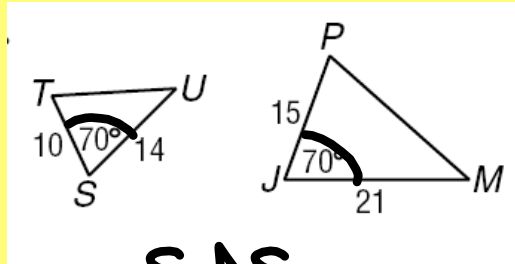
$\Delta UGA \sim \Delta FEB$
by SAS~

Can each pair of triangles be proven similar by SAS or SSS? Write a similarity statement if they are similar.



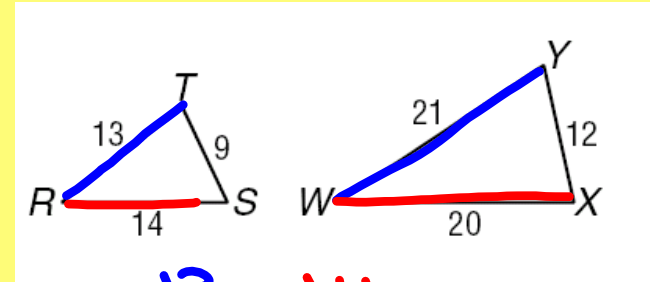
SSS ~

$$\frac{8}{9} = \frac{12}{9} = \frac{12}{6}$$



SAS ~

$$\frac{10}{15} = \frac{14}{21} = \frac{2}{3}$$

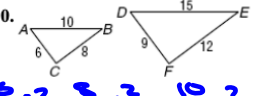


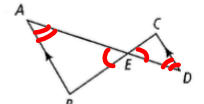
$\frac{13}{21}$ $\frac{14}{20} = \frac{7}{10}$
Not Similar

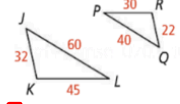
Assignment:
Concept 17 Worksheet
(back)

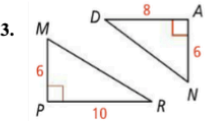
PROVING TRIANGLES ARE SIMILAR

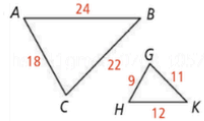
Is each pair of triangles similar? If yes, write a similarity statement and name the postulate or theorem that you used. If no, explain why.

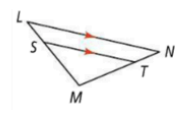
10. 
 $\frac{6}{9} = \frac{8}{12} = \frac{10}{15} = \frac{2}{3}$
 $\Delta ABC \sim \Delta DEF$ SSS~

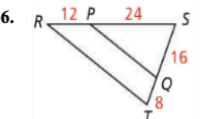
11. 
 $\Delta ABE \sim \Delta DCE$ AA~


12. 

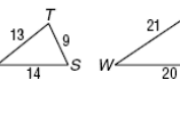
13. 

14. 

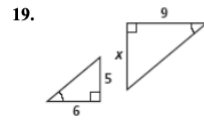
15. 

16. 

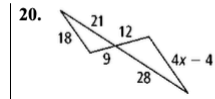
17. 

18. 

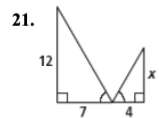
Each pair of triangles is similar. Write and solve a proportion to find the value of x. Show your work.



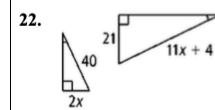
x = _____



x = _____



x = _____



x = _____