

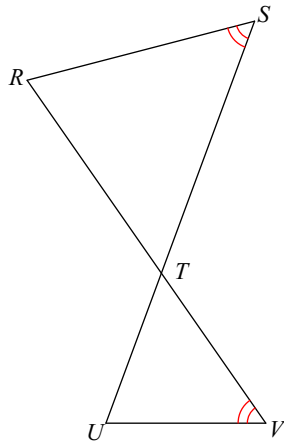
10.2 Similarity of Triangles

A) State if the triangles in each pair are similar.

B) If they are similar, state how you know they are similar. (AA, SAS, SSS)

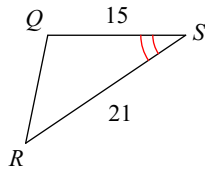
C) Then complete the similarity statement. ($ABC \sim EFG$)

1)



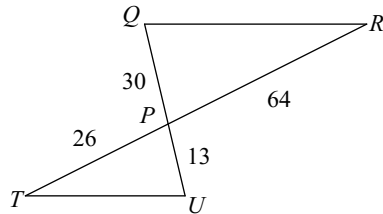
$\triangle TSR \sim$ _____

3)



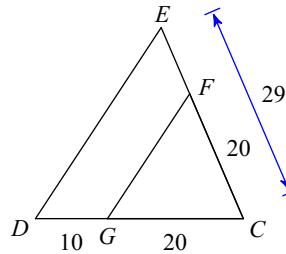
$\triangle KLM \sim$ _____

5)



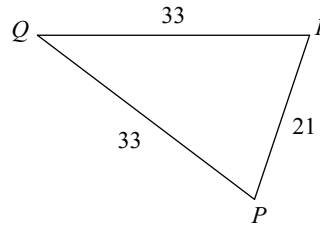
$\triangle PQR \sim$ _____

2)



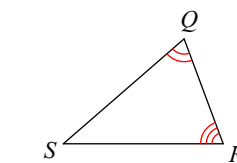
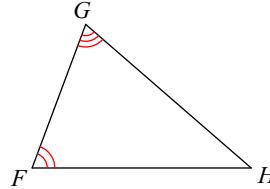
$\triangle CDE \sim$ _____

4)



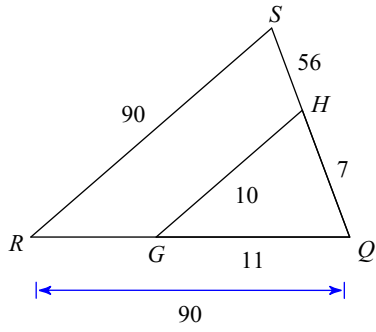
$\triangle RQP \sim$ _____

6)



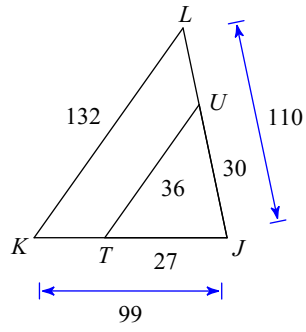
$\triangle FGH \sim$ _____

7)



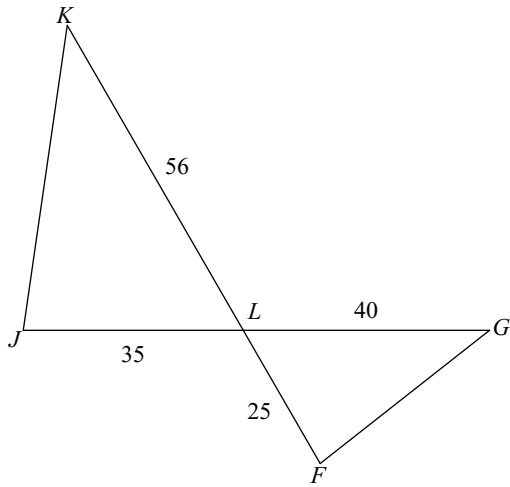
$\triangle QRS \sim$ _____

8)



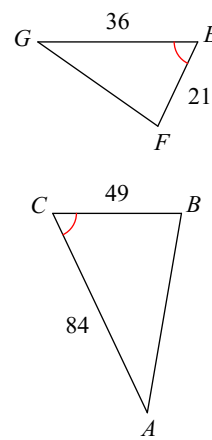
$\triangle JKL \sim$ _____

9)



$\triangle LKJ \sim$ _____

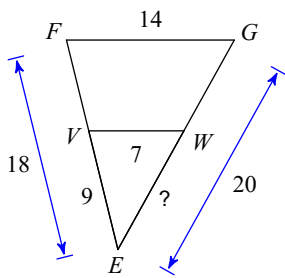
10)



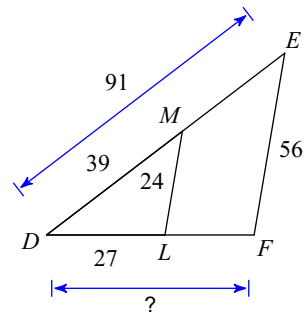
$\triangle CBA \sim$ _____

Find the missing length. The triangles in each pair are similar.

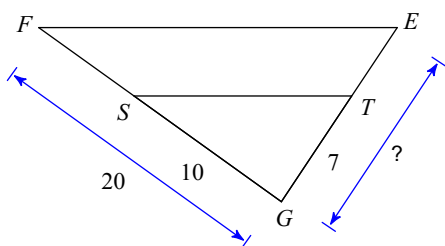
11)



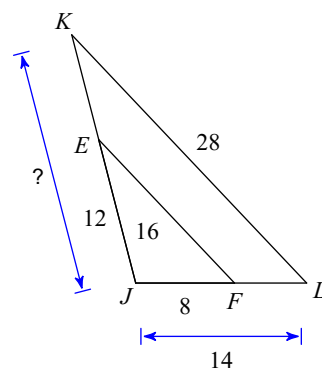
12)



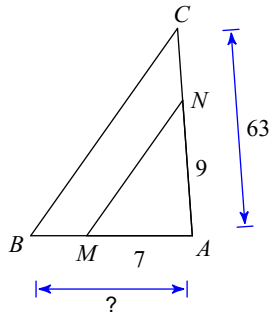
13)



14)

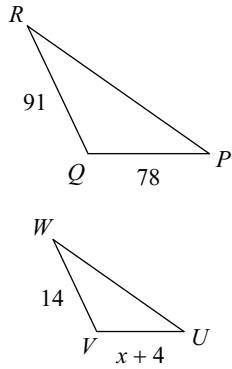


15)

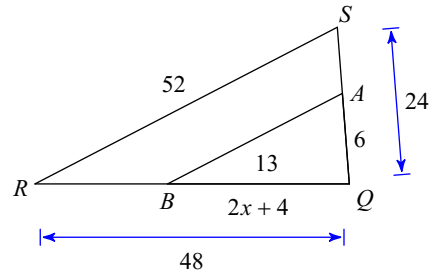


Solve for x . The triangles in each pair are similar.

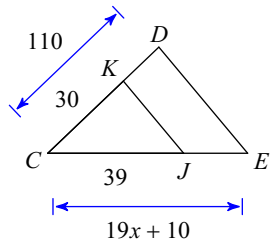
16)



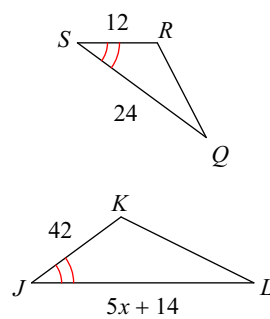
17)



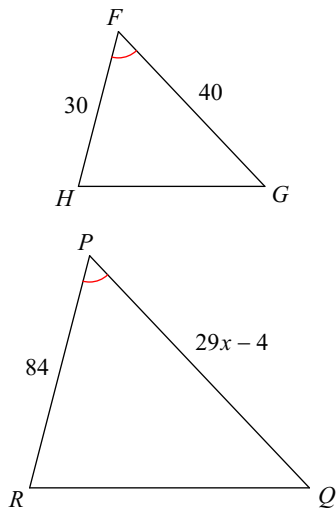
18)



19)



20)



21) A telephone pole 10 meters tall casts a shadow 8 meters long at the same time that a tree nearby casts a shadow 14 meters long. How tall is the tree?

22) On a sunny day, Bill wants to find the height of a tree. He walks 25 feet along the shadow that the tree casts until his shadow ends at the same point as the tree's shadow. Bill is 6 feet and the length of his shadow is 9 feet. How many feet tall is the tree?

23) A triangle with side lengths 5, 11, and 15 is similar to another triangle with longest side of length 24. What is the measure of the other two sides

Find the length of each arc.

24) $r = 11$ m, $\theta = 45^\circ$

25) $r = 12$ km, $\theta = 315^\circ$

Find the area of each sector.

26) $r = 9$ cm, $\theta = 90^\circ$

27) $r = 8$ in, $\theta = 240^\circ$

Use the information provided to write the equation of each circle.

28) Center: $(11, \sqrt{109})$
Radius: 6

29) Center: $(-10, 3)$
Radius: $\sqrt{6}$

Identify the center and radius of each.

30) $(x + 16)^2 + (y - 5)^2 = 4$

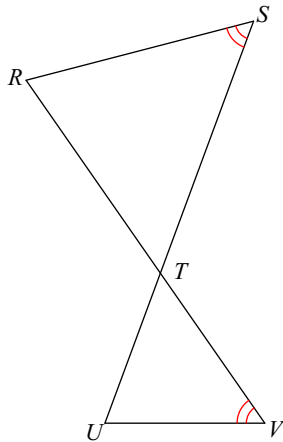
10.2 Similarity of Triangles

A) State if the triangles in each pair are similar.

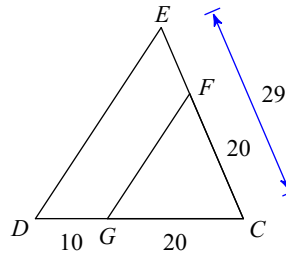
B) If they are similar, state how you know they are similar. (AA, SAS, SSS)

C) Then complete the similarity statement. ($ABC \sim EFG$)

1) similar; AA similarity; $\triangle TVU$ 2)



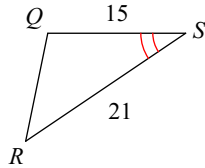
not similar



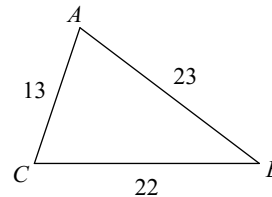
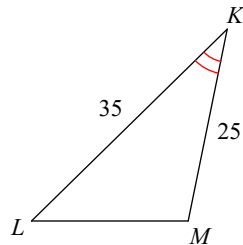
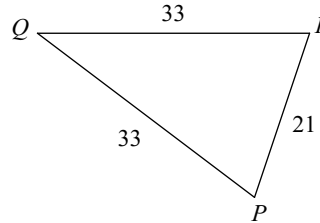
$\triangle CDE \sim$ _____

$\triangle TSR \sim$ _____

3) similar; SAS similarity; $\triangle SRQ$



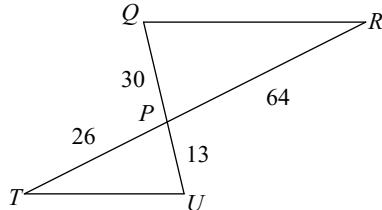
4) not similar



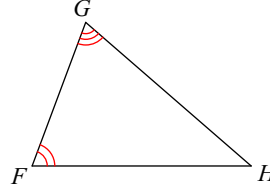
$\triangle KLM \sim$ _____

$\triangle RQP \sim$ _____

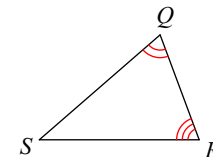
5) not similar



6)



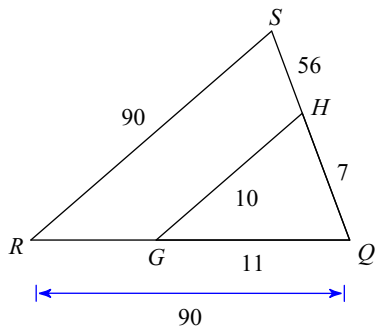
$\triangle PQR \sim$ _____



$\triangle FGH \sim$ _____

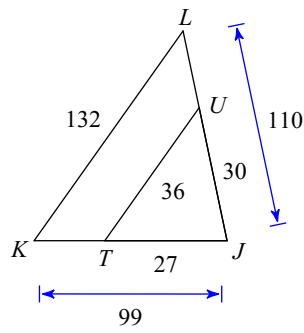
similar; AA similarity; $\triangle QRS$

7)



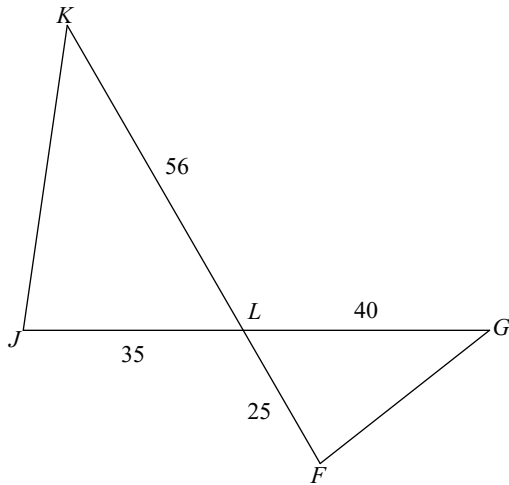
$\triangle QRS \sim$ _____
not similar

8)



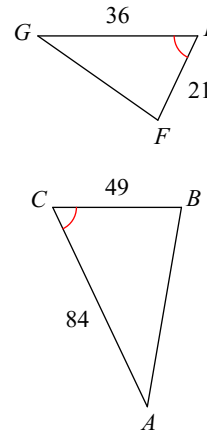
$\triangle JKL \sim$ _____
similar; SSS similarity; $\triangle JLU$

9)



$\triangle LKJ \sim$ _____
similar; SAS similarity; $\triangle LGF$

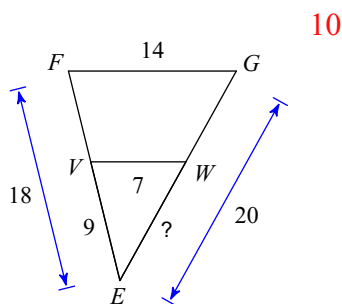
10)



$\triangle CBA \sim$ _____
similar; SAS similarity; $\triangle EFG$

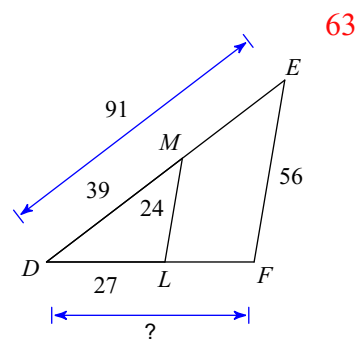
Find the missing length. The triangles in each pair are similar.

11)



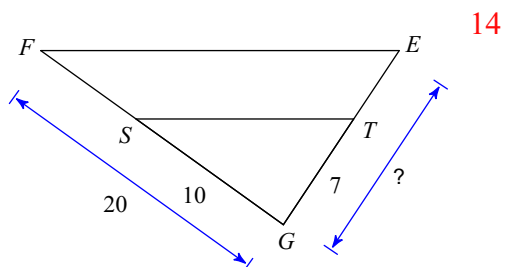
10

12)



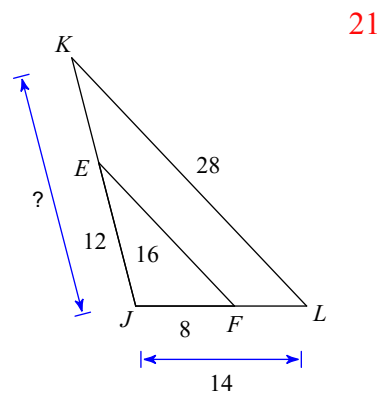
63

13)



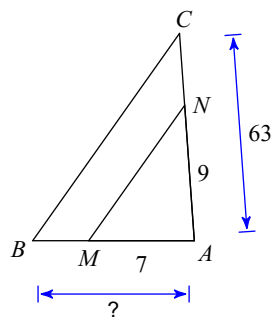
14

14)



21

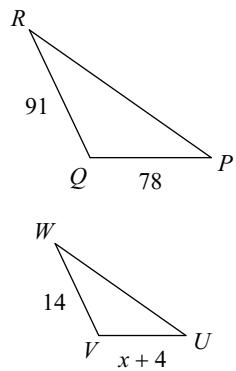
15)



49

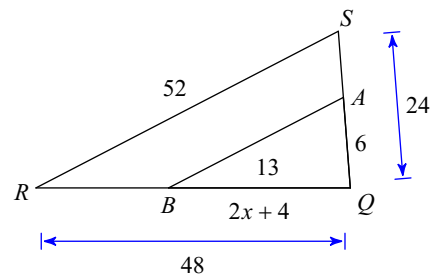
Solve for x . The triangles in each pair are similar.

16)



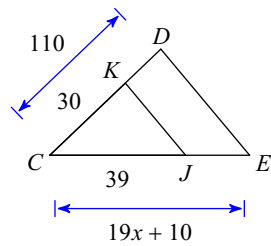
8

17)



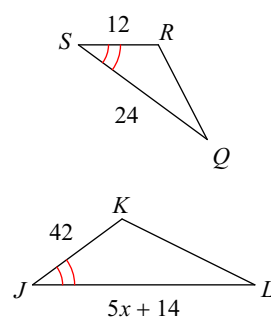
4

18)



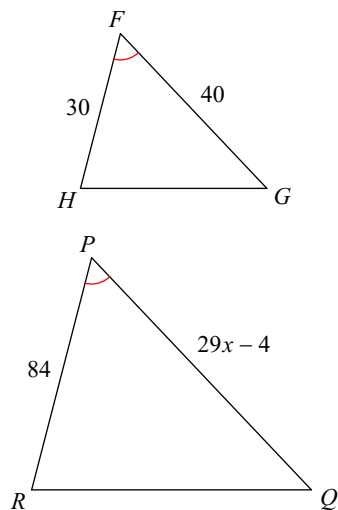
7

19)



14

20)



4

21) A telephone pole 10 meters tall casts a shadow 8 meters long at the same time that a tree nearby casts a shadow 14 meters long. How tall is the tree?

17.5 m

22) On a sunny day, Bill wants to find the height of a tree. He walks 25 feet along the shadow that the tree casts until his shadow ends at the same point as the tree's shadow. Bill is 6 feet and the length of his shadow is 9 feet. How many feet tall is the tree?

22.67 ft

23) A triangle with side lengths 5, 11, and 15 is similar to another triangle with longest side of length 24. What is the measure of the other two sides

8, 17.6

Find the length of each arc.

24) $r = 11$ m, $\theta = 45^\circ$

$$\frac{11\pi}{4} \text{ m}$$

25) $r = 12$ km, $\theta = 315^\circ$

$$21\pi \text{ km}$$

Find the area of each sector.

26) $r = 9$ cm, $\theta = 90^\circ$

$$\frac{81\pi}{4} \text{ cm}^2$$

27) $r = 8$ in, $\theta = 240^\circ$

$$\frac{128\pi}{3} \text{ in}^2$$

Use the information provided to write the equation of each circle.

28) Center: $(11, \sqrt{109})$
Radius: 6

$$(x - 11)^2 + (y - \sqrt{109})^2 = 36$$

29) Center: $(-10, 3)$
Radius: $\sqrt{6}$

$$(x + 10)^2 + (y - 3)^2 = 6$$

Identify the center and radius of each.

30) $(x + 16)^2 + (y - 5)^2 = 4$ Center: $(-16, 5)$
Radius: 2