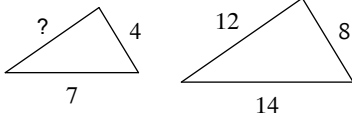


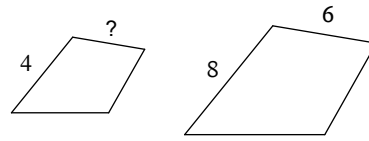
Term 3 Final Review

The polygons in each pair are similar. Find the missing segment.

1)

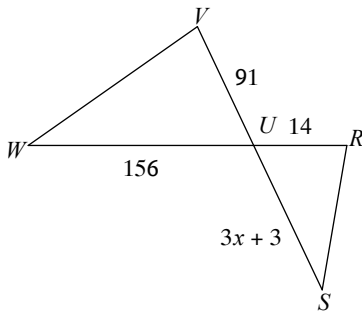


2)

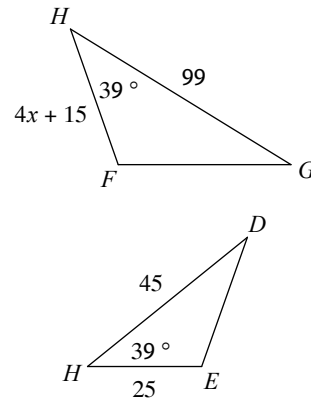


Solve for x . The triangles in each pair are similar.

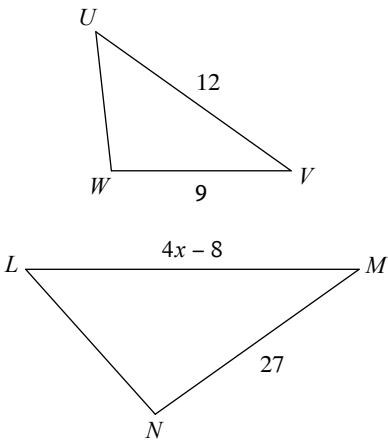
3) $\triangle UVW \sim \triangle URS$



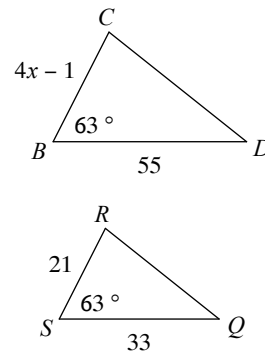
4) $\triangle HGF \sim \triangle HDE$



5) $\triangle LMN \sim \triangle UVW$

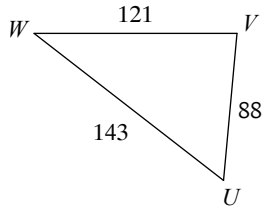
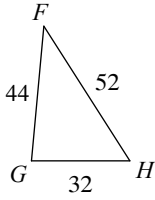


6) $\triangle BCD \sim \triangle SRQ$



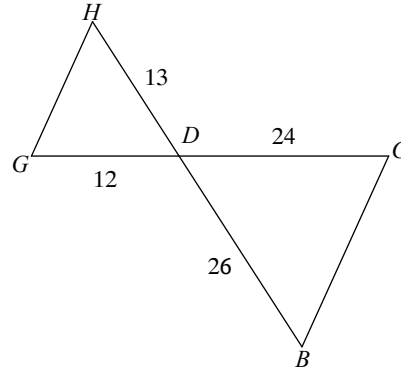
State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement.

7)



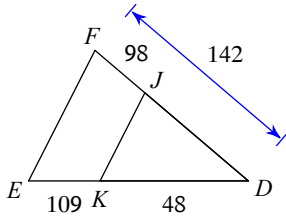
$\triangle UVW \sim$ _____

8)



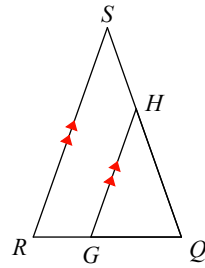
$\triangle DCB \sim$ _____

9)



$\triangle DEF \sim$ _____

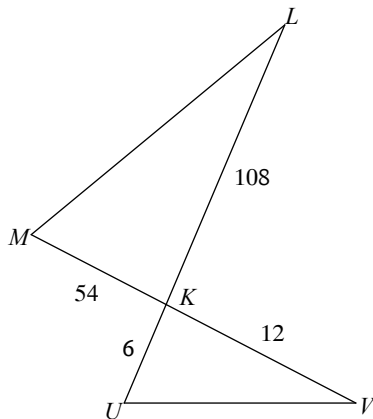
10)



$\triangle QRS \sim$ _____

Write a two-column proof to determine if the two triangles are similar.

11)

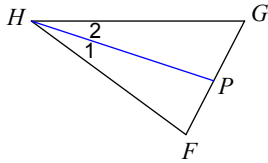


$\triangle KLM \sim$ _____

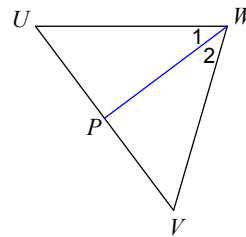
12) How can you tell if 3 side lengths will form a triangle? Give an example in your reasoning.

Each figure shows a triangle with one of its angle bisectors.

13) $m\angle 1 = 3x + 6$ and $m\angle FHG = 8x + 4$.
Find $m\angle FHG$.

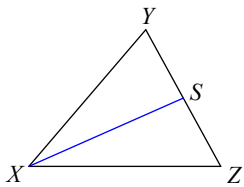


14) Find $m\angle 2$ if $m\angle 1 = 3x + 10$ and $m\angle 2 = 5x - 8$.

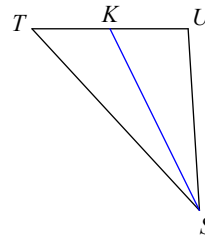


Each figure shows a triangle with one or more of its medians.

15) Find SZ if $SY = \frac{2x - 5}{2}$ and $SZ = \frac{x - 2}{2}$

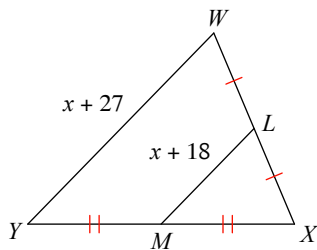


16) Find KU if $UT = x + 1$ and $KT = x - 5$

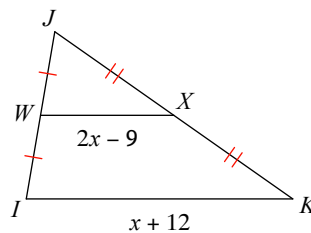


Find the missing length indicated.

17) Find LM

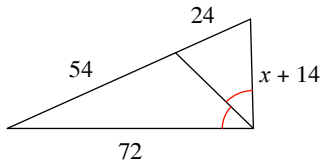


18) Find IK

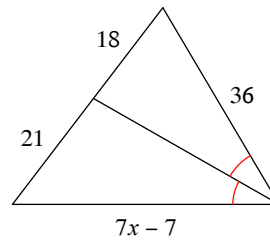


Solve for x .

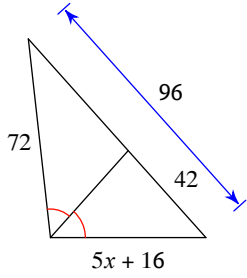
19)



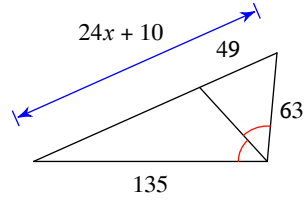
20)



21)

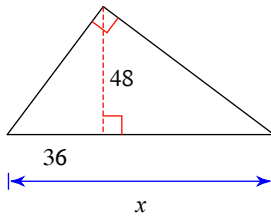


22)

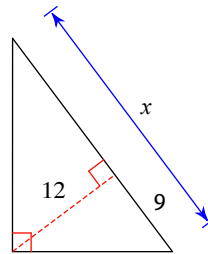


Find the missing length indicated. Leave your answer in simplest radical form.

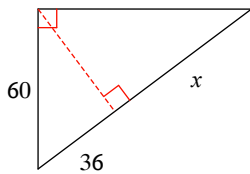
23)



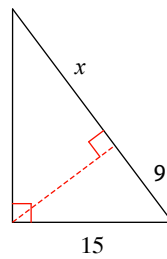
24)



25)



26)



- 27) Hyun is tasked with finding out how tall a lightpost is with only a measuring tape and a mirror. He placed the mirror in between him and the lightpost and moves backward until he sees the top of the lightpost in the mirror. He measures that he is 3.5 feet from the mirror, and that the mirror is 16.8 feet from the lightpost. If Hyun is 5.5 feet tall, how tall is the lightpost?

Find the point that partitions the segment in the specified ratio.

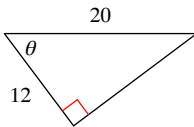
28) $A(3, -7), B(-5, -19), 3:1$ ratio

29) $A(23, 15), B(-7, -20), 2:3$ ratio

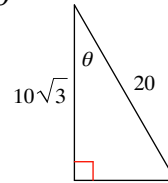
- 30) Define trigonometry.

Find the value of the trig function indicated.

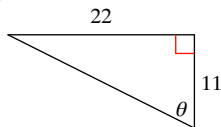
31) $\tan \theta$



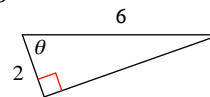
32) $\cos \theta$



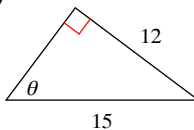
33) $\cos \theta$



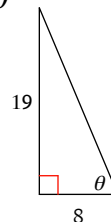
34) $\sin \theta$



35) $\csc \theta$

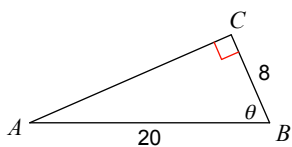


36) $\csc \theta$

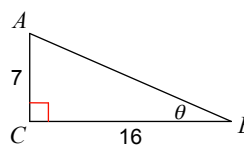


Find the measure of each angle indicated. Round to the nearest tenth.

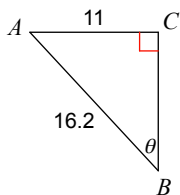
37)



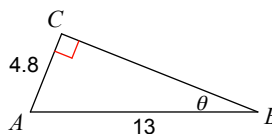
38)



39)

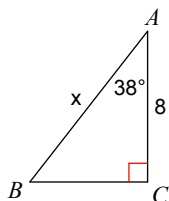


40)



Find the measure of each side indicated. Round to the nearest hundredth.

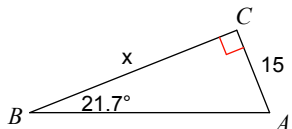
41)



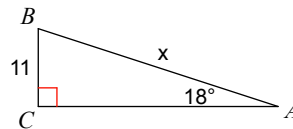
42)



43)

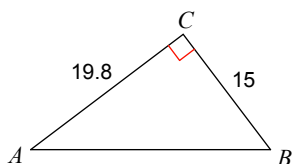


44)



Solve each triangle. Round answers to the nearest hundredth.

45)



46) $AB = \underline{\hspace{2cm}}$ $m\angle A = \underline{\hspace{2cm}}$

$BC = \underline{\hspace{2cm}}$ $m\angle B = \underline{\hspace{2cm}}$

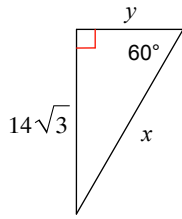
$AC = \underline{\hspace{2cm}}$ $m\angle C = \underline{\hspace{2cm}}$

47) From the top of a fire tower, a forest ranger sees his partner on the ground at an angle of depression of 40° . If the tower is 45 feet high, how far is the partner from the base of the tower?

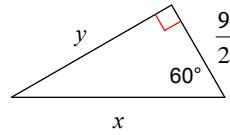
48) A ladder leans against a brick wall. The foot of the ladder is 6 feet from the wall. The ladder reaches a height of 15 feet on the wall. What is the angle the ladder makes with the wall?

Find the missing side lengths. Leave your answers as radicals in simplest form.

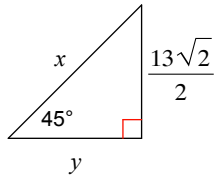
49)



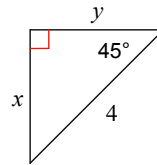
50)



51)



52)



53) Explain how special right triangles make up the unit circle. Give an example in your explanation.

Find the exact value of each trigonometric function.

54) $\tan 30^\circ$

55) $\sin 210^\circ$

56) $\cos \frac{\pi}{3}$

57) $\tan \frac{4\pi}{3}$

58) $\sin 180^\circ$

59) $\tan \frac{7\pi}{4}$

60) $\cos \frac{\pi}{4}$

61) $\cos 210^\circ$

62) Name the three pythagorean identities. Explain where each one comes from.

Simplify each trigonometric expression.

63) $\frac{\sec \theta}{\csc \theta}$

64) $\frac{(1 + \sin \theta)(1 - \sin \theta)}{1 - \cos^2 \theta}$

65) $\tan \theta \cdot (\cot \theta + \tan \theta)$

66) $(\csc \theta + \cot \theta)(\csc \theta - \cot \theta)$

67) What is a radian?

Convert each degree measure into radians and each radian measure into degrees.

68) 15°

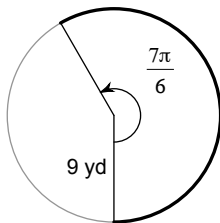
69) $\frac{11\pi}{6}$

70) $\frac{5\pi}{6}$

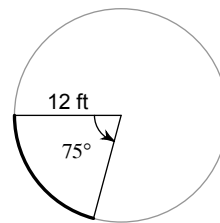
71) 285°

Find the length of each arc.

72)

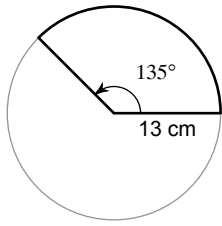


73)

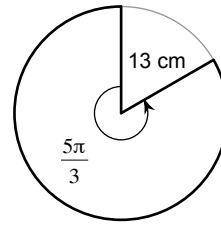


Find the area of each sector.

74)

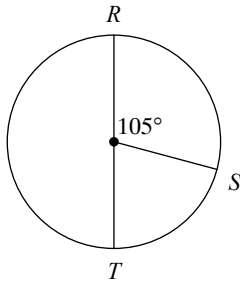


75)

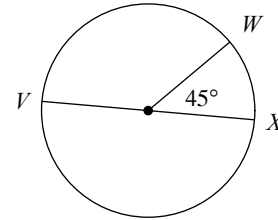


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

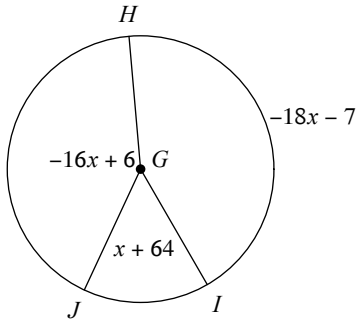
76) $m\widehat{STR}$



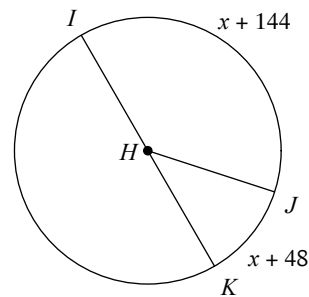
77) $m\widehat{XVW}$



78) $m\angle IGJ$

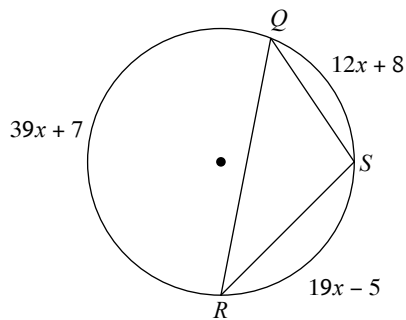


79) $m\angle IHJ$

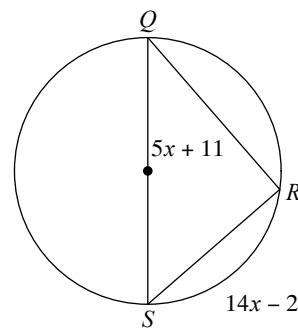


Find the measure of the arc or angle indicated.

80) Find $m\widehat{QSR}$

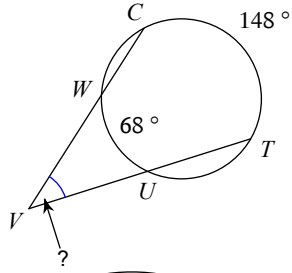


81) Find $m\widehat{RS}$

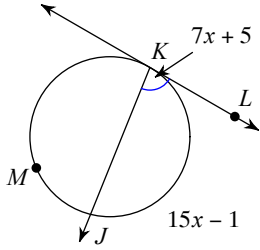


Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

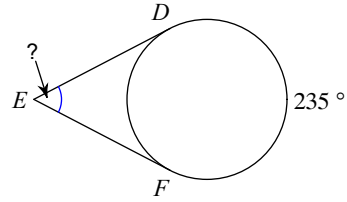
82)



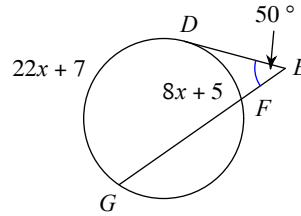
84) Find $m\widehat{JMK}$



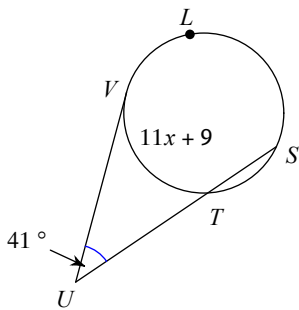
83)



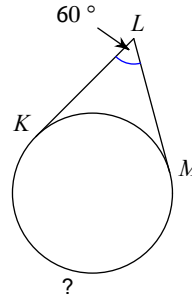
85) Find $m\widehat{GF}$



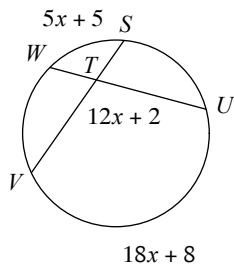
86) $m\widehat{SLV} = 22x - 8$
Find $m\widehat{SLV}$



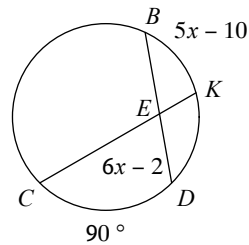
87)



88) Find $m\angle UTV$

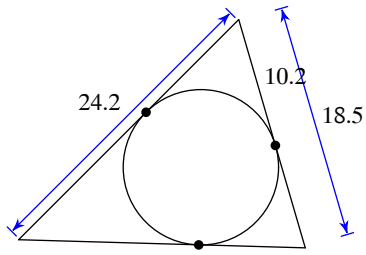


89) Find $m\angle DEC$



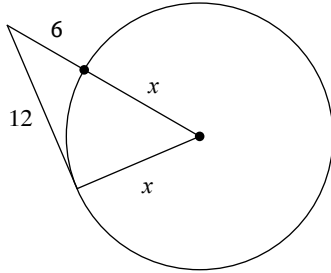
Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.

90)



Solve for x . Assume that lines which appear to be tangent are tangent.

91)



Determine if line AB is tangent to the circle.

92)

