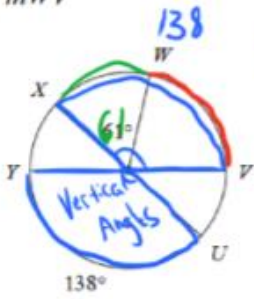


Circles Properties Review

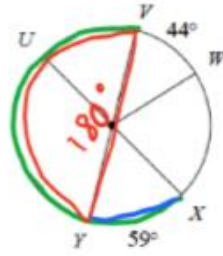
Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

1)  $m\widehat{WV}$



$$138 - 61 = 77^\circ$$

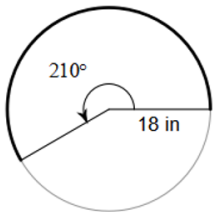
2)  $m\widehat{XYV}$



$$180 + 59 = 239^\circ$$

Find the length of each arc.

3)



$$S = \frac{\theta}{360} \cdot 2\pi r$$

$$S = \frac{210}{360} \cdot 2\pi(18)$$

$$S = 21\pi \text{ in}$$

3b) The arc length of a circle is  $24\pi$  in. The central angle that formed the arc is  $270^\circ$ . What is the length of the radius?

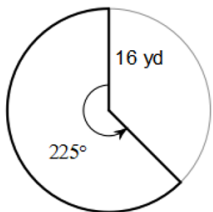
$$\frac{24\pi}{2\pi} = \frac{270}{360} \cdot 2\pi r$$

$$\frac{360}{270} \cdot 12 = \frac{270}{360} r \cdot \frac{360}{270}$$

$$16 \text{ in.} = r$$

Find the area of each sector.

4)



$$A = \frac{225}{360} \pi (16)^2$$

$$A = 160\pi \text{ yd}^2$$

4b) The sector area of a circle is  $16\pi$  in<sup>2</sup>. The central angle that formed the arc is  $90^\circ$ . What is the length of the radius?

$$\frac{16\pi}{\pi} = \frac{90}{360} \pi r^2$$

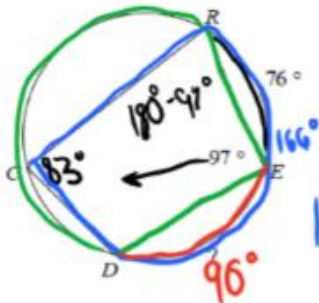
$$\frac{360}{90} \cdot 16 = \frac{90}{360} r^2 \cdot \frac{360}{90}$$

$$\sqrt{64} = \sqrt{r^2}$$

$$8 = r$$

Find the measure of the arc or angle indicated.

5)

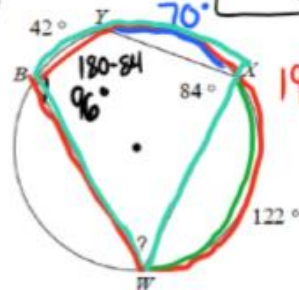


$$2(\angle) = \text{arc}$$

$$2(83) = 166^\circ$$

$$166 - 76 = 90^\circ$$

6)



$$2(\angle) = \text{arc}$$

$$2(96) = 192^\circ$$

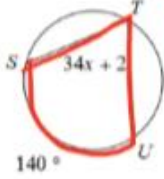
$$192 - 122 = 70^\circ$$

$$\frac{2(?)}{2} = \frac{112}{2}$$

$$? = 56^\circ$$

Solve for  $x$ . Assume that lines which appear tangent are tangent.

7)



$$2(\angle) = \text{arc}$$

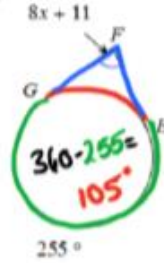
$$2(34x + 2) = 140$$

$$68x + 4 = 140$$

$$68x = 136$$

$$x = 2$$

8)



$$2(\angle) = \text{Big} - \text{Small}$$

$$2(8x + 11) = 225 - 135$$

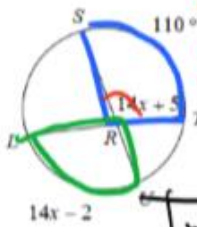
$$16x + 22 = 90$$

$$16x = 90$$

$$x = 5$$

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

9) Find  $m\angle SRT$



$$2(\angle) = \widehat{1} + \widehat{2}$$

$$2(14x + 5) = 110 + 14x - 2$$

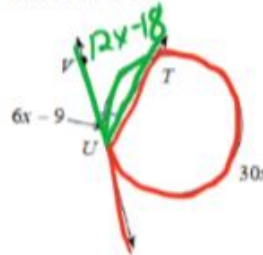
$$28x + 10 = 108 + 14x$$

$$14x = 98$$

$$x = 7$$

$$m\angle SRT = 14(7) + 5 = 105^\circ$$

10) Find  $m\angle TUV$



$$2(\angle) = \text{arc}$$

$$2(6x - 9) = 12x - 18$$

$$12x - 18 + 30x = 360$$

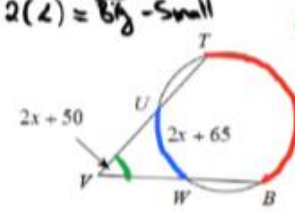
$$42x - 18 = 360$$

$$42x = 378$$

$$x = 9$$

$$m\angle TUV = 6(9) - 9 = 45^\circ$$

11) Find  $m\angle TVB$



$$2(\angle) = \text{Big} - \text{Small}$$

$$2(2x + 50) = 165 - (2x + 65)$$

$$4x + 100 = 100 - 2x - 65$$

$$4x + 100 = 100 - 2x - 65$$

$$4x + 100 = 100 - 2x - 65$$

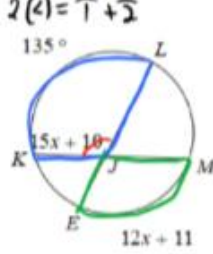
$$6x + 100 = 100$$

$$6x = 0$$

$$x = 0$$

$$m\angle TVB = 2(0) + 50 = 50^\circ$$

12) Find  $m\angle KJL$



$$2(\angle) = \widehat{1} + \widehat{2}$$

$$2(15x + 10) = 135 + 12x + 11$$

$$30x + 20 = 146 + 12x$$

$$-12x$$

$$18x + 20 = 146$$

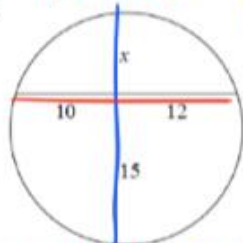
$$18x = 126$$

$$x = 7$$

$$m\angle KJL = 15(7) + 10 = 115^\circ$$

Solve for  $x$ . Assume that lines which appear tangent are tangent.

13)



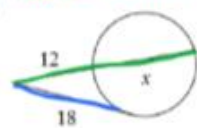
$$\text{Part}(\text{Part})$$

$$15(x) = 10(12)$$

$$15x = 120$$

$$x = 8$$

14)



$$\text{Outside}(\text{Whole}) = \text{Outside}(\text{Whole})$$

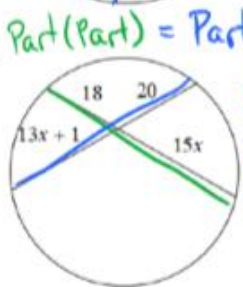
$$12(x + 12) = 18(18)$$

$$12x + 144 = 324$$

$$12x = 180$$

$$x = 15$$

15)



$$\text{Part}(\text{Part}) = \text{Part}(\text{Part})$$

$$20(13x + 1) = 18(15x)$$

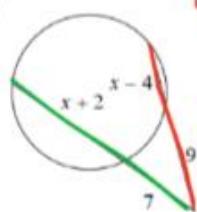
$$260x + 20 = 270x$$

$$-260x$$

$$20 = 10x$$

$$x = 2$$

16)



$$9(x - 4 + 9) = 7(x + 2 + 7)$$

$$9(x + 5) = 7(x + 9)$$

$$9x + 45 = 7x + 63$$

$$-7x$$

$$2x + 45 = 63$$

$$2x = 16$$

$$x = 8$$