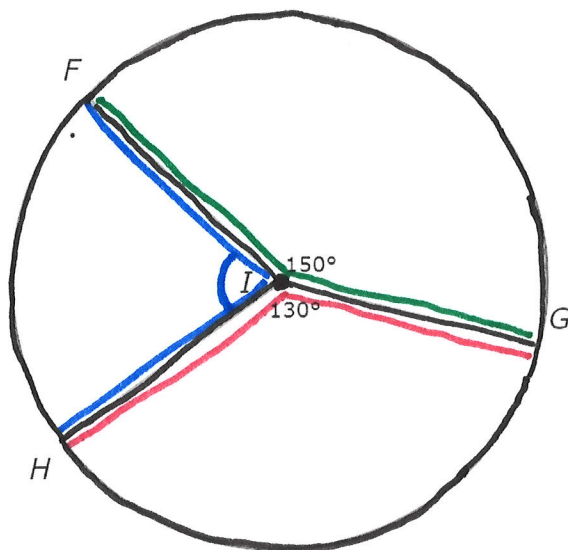


Worked Examples - Central Angles and Arc Measures (IXL Geometry W.2)

1.

What is $m\angle FIH$?



measure of a
central angle

=
measure of the
ARC which is formed
by the endpoints of
the central \angle s sides.

Measure of the central \angle s adds to 360°

$$1. \quad \underline{m\angle FIH} + \underline{m\angle FIG} + \underline{m\angle GIH} = 360^\circ \quad \text{Write Eq.}$$

$$2. \quad m\angle FIH + 150^\circ + 130^\circ = 360^\circ \quad \text{Plug In}$$

$$3. \quad m\angle FIH + 280^\circ = 360^\circ$$

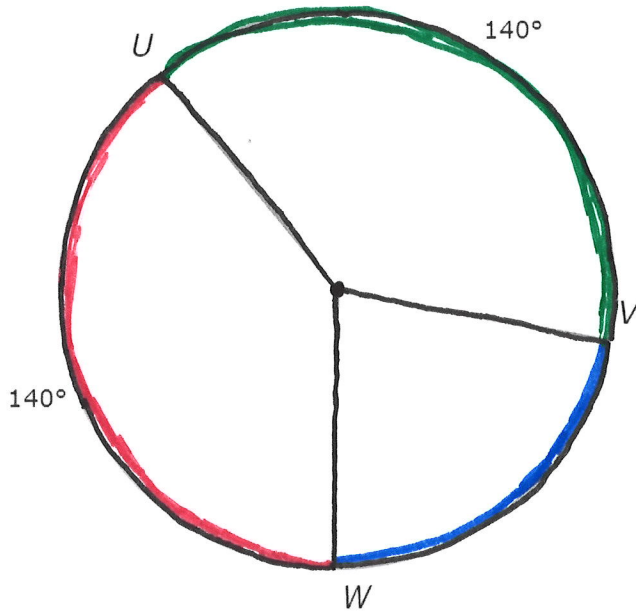
- 280° - 280°

Combine Like Terms

$$4. \quad m\angle FIH = 80^\circ \quad \text{Solve}$$

2.

What is $m\widehat{VW}$?



Measure of a circle
is 360° .

1. $m\widehat{VW} + m\widehat{VU} + m\widehat{UW} = 360^\circ$

write Eq.

2. $m\widehat{VW} + 140^\circ + 140^\circ = 360^\circ$

plug In

3. $m\widehat{VW} + 280^\circ = 360^\circ$
 $- 280^\circ \quad - 280^\circ$

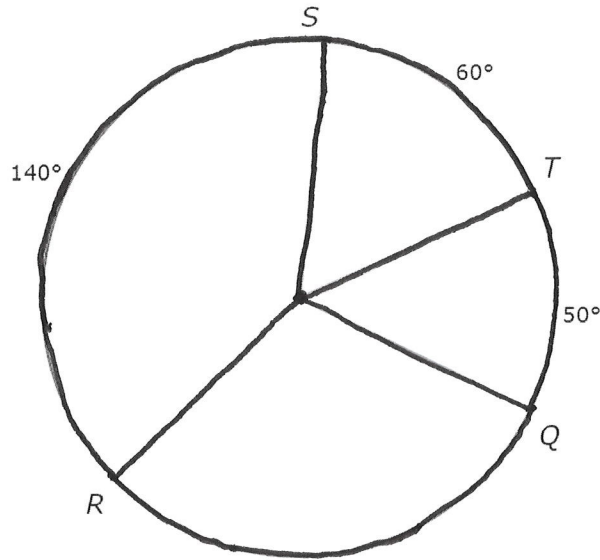
Combine Like
Terms

4. $m\widehat{VW} = 80^\circ$

Solve

3.

What is $m\widehat{QR}$?



$$m\widehat{QR} + 50 + 60 + 140 = 360$$

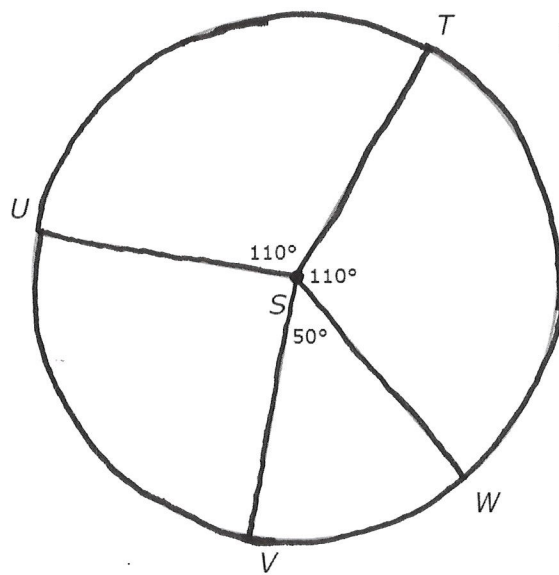
$$m\widehat{QR} + 250 = 360$$

$$\quad - 250 \quad - 250$$

$$m\widehat{QR} = 110^\circ$$

4.

What is $m\angle USV$?



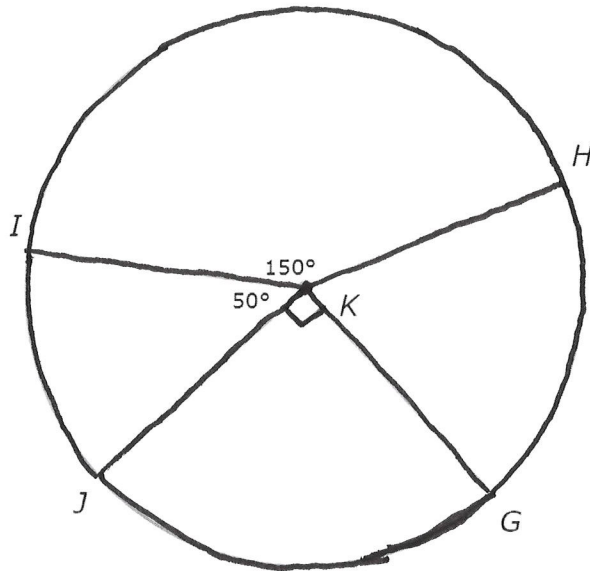
$$m\angle USV + 110 + 110 + 50 = 360$$

$$m\angle USV + 270 = 360$$

$$m\angle USV = 90^\circ$$

5.

What is $m\angle GKH$?



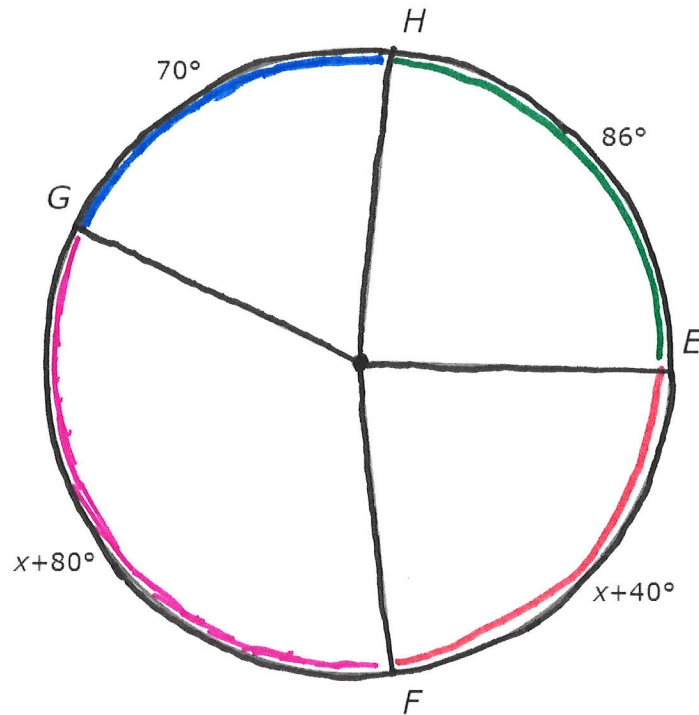
$$m\angle GKH + 150 + 50 + 90 = 360$$

$$\begin{array}{r} m\angle GKH + 290 = 360 \\ - 290 \quad - 290 \\ \hline \end{array}$$

$$m\angle GKH = 70$$

6.

What is the value of x ?



1. $m\widehat{GH} + m\widehat{HE} + m\widehat{FE} + m\widehat{GF} = 360^\circ$ write Eq.

2. $70^\circ + 86^\circ + x + 40 + x + 80 = 360^\circ$ Plug In

3. $2x + 276 = 360^\circ$
 $-276 \quad -276$

Combine Like
Terms

4. $\frac{2x}{2} = \frac{84}{2}$

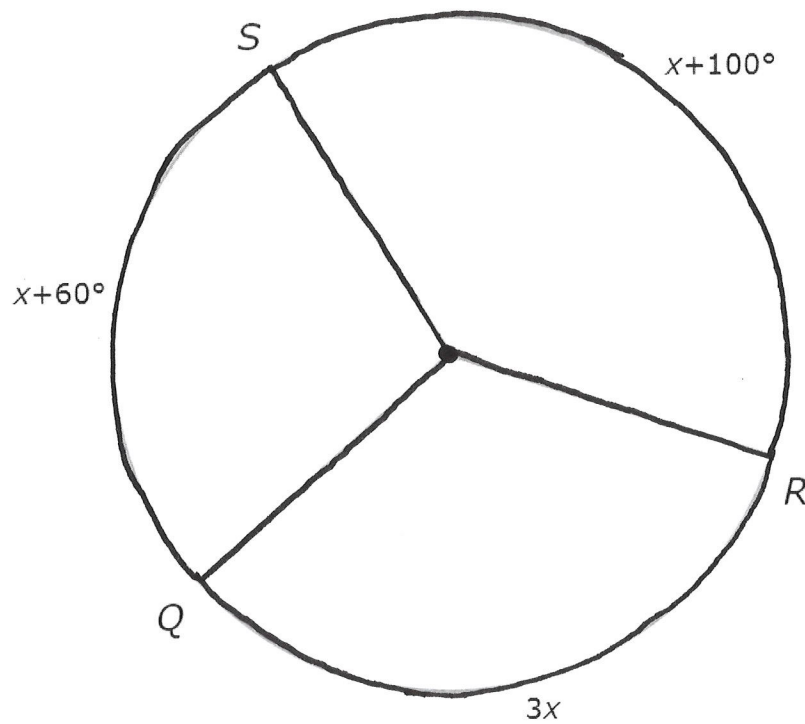
subtract

5. $x = 42$

solve

7.

What is the value of x ?



$$x+60+x+100+3x=360$$

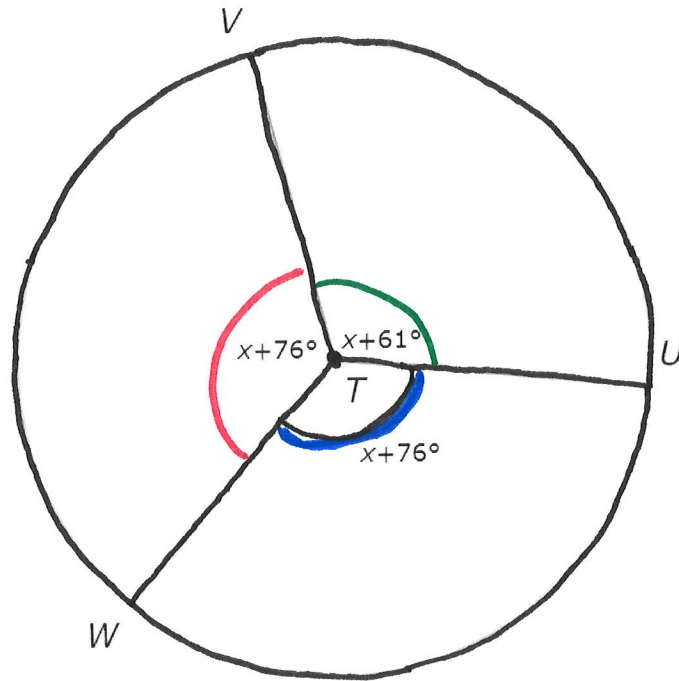
$$\begin{array}{r} 5x+160=360 \\ -160 \quad -160 \\ \hline \end{array}$$

$$\frac{5x}{5} = \frac{200}{5}$$

$$\boxed{x=40}$$

8.

What is the value of x ?



1. $m\angle UTW + m\angle UTV + m\angle VTW = 360^\circ$ write Eq.

2. $x+76 + x+61 + x+76 = 360$ Plug In

3.
$$\begin{array}{r} 3x + 213 = 360 \\ - 213 \quad - 213 \\ \hline \end{array}$$

4.
$$\frac{3x}{3} = \frac{147}{3}$$

5. $x = 49$

Combine

subtract

solve