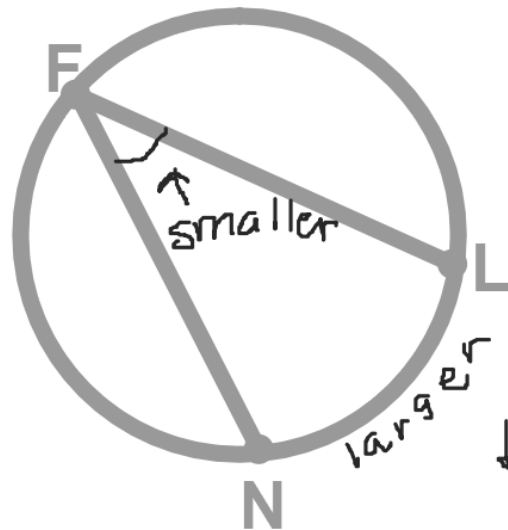


Unit 9 Lesson 4: Inscribed Angles

Objectives: Find measures of Inscribed angles.

Find measures of angles of inscribed polygons.

inscribed angle: angle whose vertex is on the circle and whose sides contain chords.



$\angle NFL$

intercepted arc??

btwn 2 sides



- The measure of an inscribed \angle is $\frac{1}{2}$ of the intercepted arc.

$$\text{insc. } \angle = \text{arc} \div 2$$

$$\text{intercepted arc} = \text{insc. } \angle \cdot 2$$

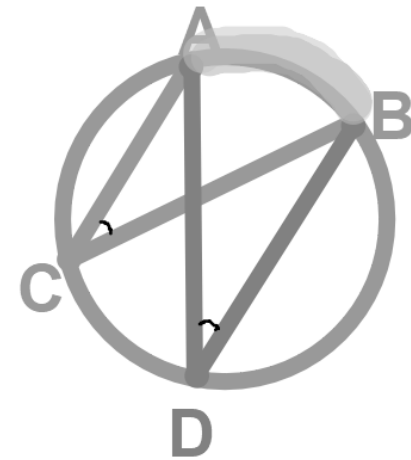
Unit 9 Lesson 4: Inscribed Angles

Objectives: Find measures of Inscribed angles.

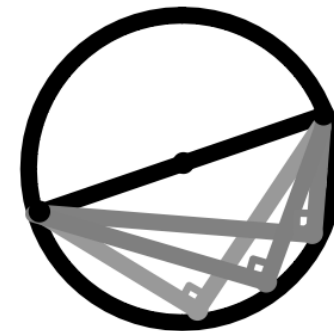
Find measures of angles of inscribed polygons.

- If 2 inscribed \angle 's intercept the same arc or \cong arcs, then the \angle 's are \cong .

\angle ACB intercepts \widehat{AB}
 \angle ADB intercepts \widehat{AB}
so \angle ACB \cong \angle ADB



- If an inscribed \angle intercepts a semicircle, then it is a right \angle .



Unit 9 Lesson 4: Inscribed Angles

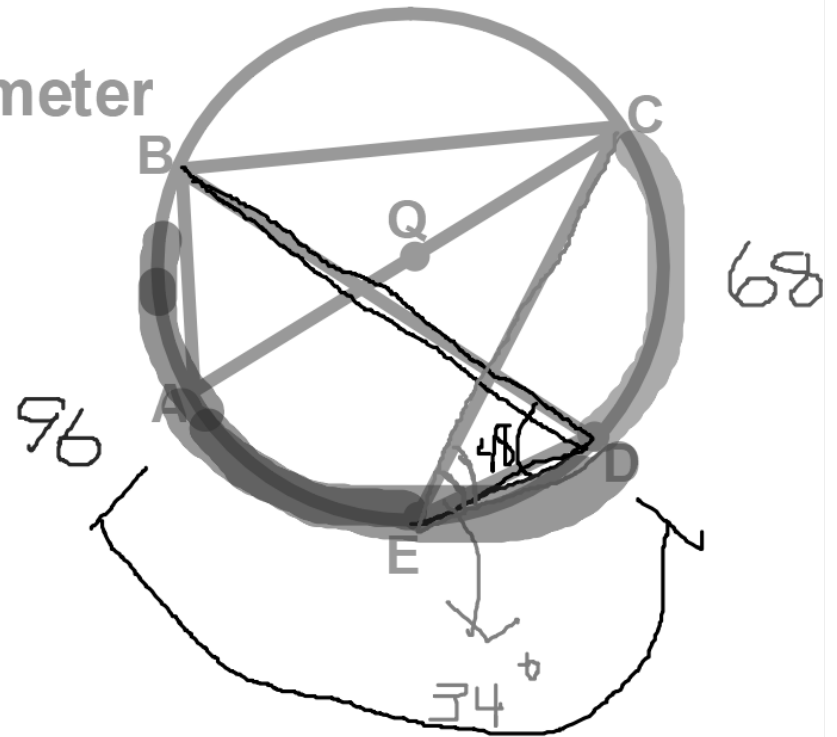
Objectives: Find measures of Inscribed angles.

Find measures of angles of inscribed polygons.

\overline{AC} is a diameter

$$m\widehat{CD} = 68$$

$$m\widehat{BE} = 96$$



$$1. m\angle ABC = 90^\circ$$

$$m\angle BDE = 96 \div 2 = 48^\circ$$

$$m\angle CED = 68 \div 2 = 34^\circ$$

$$m\widehat{AD} = 180 - 68 = 112^\circ$$

since \overline{AC} is diameter

Unit 9 Lesson 4: Inscribed Angles

Objectives: Find measures of Inscribed angles.

Find measures of angles of inscribed polygons.

$$\overset{OP}{\text{VU}} \cong \overset{OP}{\text{SU}}$$

$$m\angle 2 = x + 9, \quad m\angle 4 = 2x + 6$$

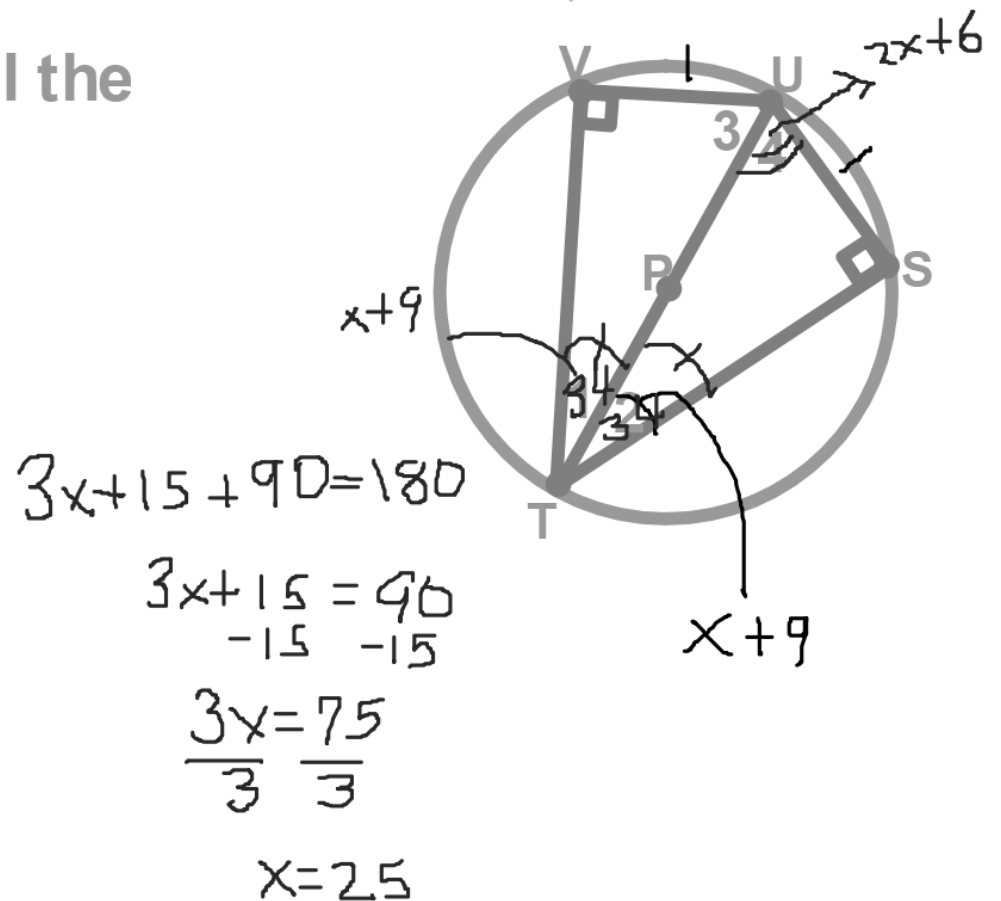
2. Find the measures of all the numbered angles.

$$m\angle 1 = 25 + 9 = \boxed{34^\circ}$$

$$m\angle 2 = 25 + 9 = \boxed{34^\circ}$$

$$m\angle 3 = 56^\circ \text{ (same as } \angle 4)$$

$$m\angle 4 = 2(25) + 6 = \boxed{56^\circ}$$



Unit 9 Lesson 4: Inscribed Angles

Objectives: Find measures of Inscribed angles.

Find measures of angles of inscribed polygons.

4 sides

4 vertices
on circle

- If a quadrilateral is inscribed in a circle, then its opposite angles are supplementary.

$$\text{add} = 180^\circ$$

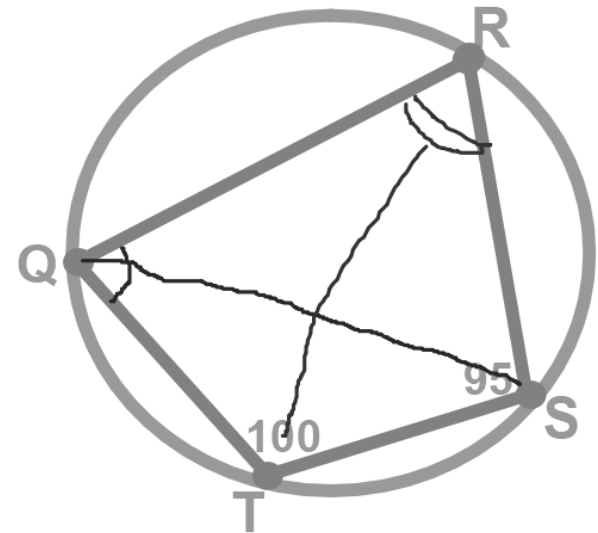
3. Find the measure of angle Q and angle R.

$$\begin{array}{r} \angle Q + 95^\circ = 180 \\ - 95 \quad 95 \end{array}$$

$$\boxed{m\angle Q = 85^\circ}$$

$$\begin{array}{r} \angle R + 100 = 180 \\ - 100 \quad - 100 \end{array}$$

$$\boxed{m\angle R = 80^\circ}$$



Unit 9 Lesson 4: Inscribed Angles

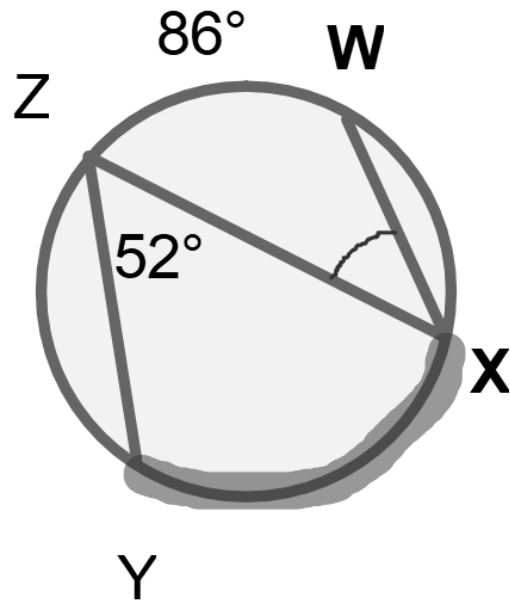
Objectives: Find measures of Inscribed angles.

Find measures of angles of inscribed polygons.

4. Find each measure:

a.) $m\angle X = 86 \div 2 = 43^\circ$

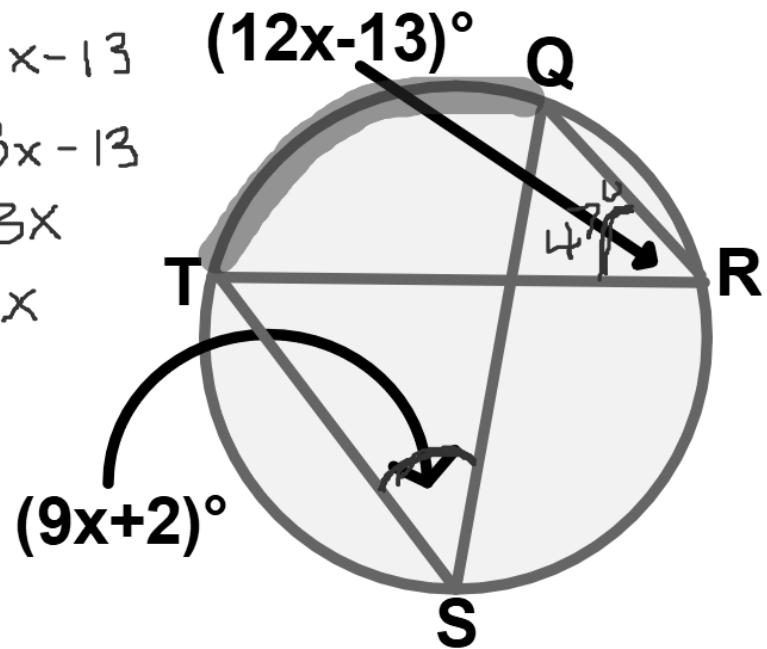
b.) $m\widehat{YX} = 52 \times 2 = 104^\circ$



5. Find $m\angle R = 12(5) - 13 = 47^\circ$

Find $m\widehat{TQ} = 47 \cdot 2 = 94^\circ$

$$\begin{aligned} 9x+2 &= 12x-13 \\ 2 &= 3x-13 \\ 15 &= 3x \\ 5 &= x \end{aligned}$$



Unit 9 Lesson 4: Inscribed Angles

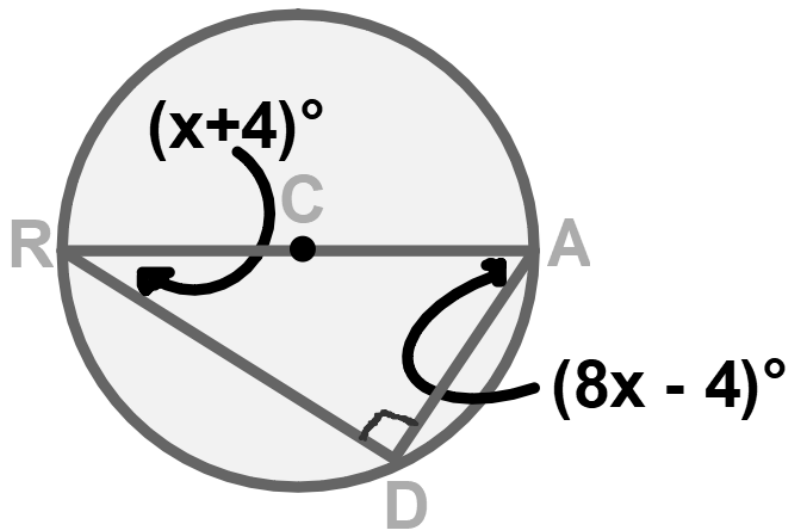
Objectives: Find measures of Inscribed angles.

Find measures of angles of inscribed polygons.

6. Find $m\angle A = 8(10) - 4$

$$9x = 90 \quad \boxed{= 76^\circ}$$

$$x = 10$$



7. Quadrilateral VUST is inscribed in the circle.

Find $m\angle S$ and $m\angle T$.

$$m\angle S = \boxed{40^\circ} \text{ (Supp to } \angle V \text{)}$$

$$m\angle T = 8(8) + 4 = \boxed{68^\circ}$$

$$22x + 4 = 180$$

$$\frac{22x}{22} = \frac{176}{22}$$

$$x = 8$$

