

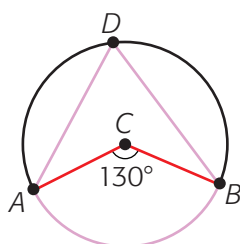
FREQUENTLY ASKED Questions

Study Aid

- See Lesson 9.1, Examples 1 and 2.
- Try Mid-Chapter Review questions 1, 2, and 3.

Q: How are inscribed angles and central angles in circles related?

A: If the same arc subtends both the inscribed angle and the central angle, the central angle is twice the inscribed angle. For example,



$\angle C$ and $\angle D$ are both subtended by minor arc AB .

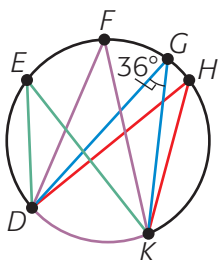
$$\begin{aligned} \text{Since } \angle C &= 130^\circ, \\ \angle D &= \angle C \div 2 \text{ Inscribed angles subtended} \\ &\quad \text{by the same arc} \\ &= 130^\circ \div 2 \\ \angle D &= 65^\circ \end{aligned}$$

Study Aid

- See Lesson 9.2, Examples 1 and 2.
- Try Mid-Chapter Review questions 4, 5, and 6.

Q: If you are given one inscribed angle in a circle, how could you draw other inscribed angles of the same measure?

A: If the same arc subtends inscribed angles, they are equal. For example,



$\angle E$, $\angle F$, $\angle G$, and $\angle H$ are inscribed angles all subtended by minor arc DK .

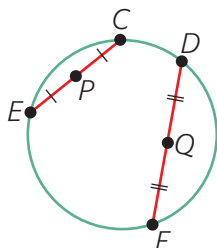
$\angle G = 36^\circ$, so $\angle E$, $\angle F$, and $\angle H$ are also 36° .

Study Aid

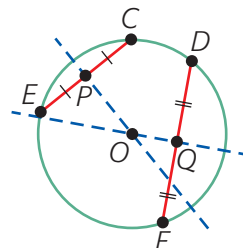
- See Lesson 9.3, Examples 1 and 2.
- Try Mid-Chapter Review question 7.

Q: How is the centre of a circle related to chords in the circle?

A: The centre of a circle always lies on the perpendicular bisector of any chord. By drawing a pair of non-parallel chords and their perpendicular bisectors, the resulting point of intersection locates the centre of the circle. For example,



To locate the centre of the circle, draw two chords that are not parallel. Determine the midpoints of these chords.

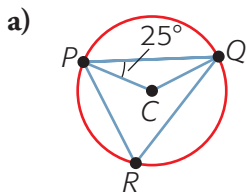


Draw a perpendicular line through the midpoint of each chord. The centre of the circle is where the perpendiculars intersect.

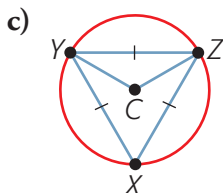
Practice

Lesson 9.1

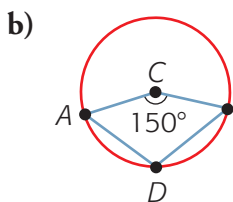
1. For each circle with centre C , determine the unknown angle measures. Show your work.



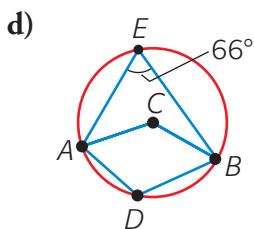
$$\angle R = ?$$



$$\angle YCZ = ?, \angle CYZ = ?$$

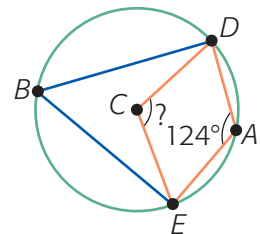
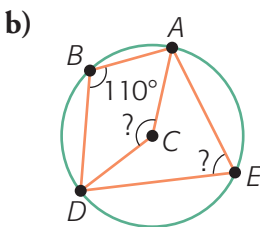
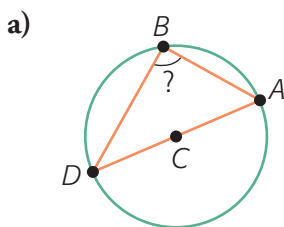


$$\angle D = ?$$



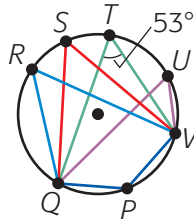
$$\angle ACB = ?, \angle D = ?$$

2. Draw a regular dodecagon (a 12-sided figure) inscribed in a circle. What is the measure of each interior angle of the dodecagon?
3. For each circle with centre C , determine the measure of the angles indicated.



Lesson 9.2

4. In the circle shown at right, determine the measure of the indicated angle.
5. A kite is a quadrilateral that has two pairs of adjacent sides that are equal. Can you draw a circle through all four vertices of a kite? Explain why or why not.
6. Determine the measures of $\angle R$, $\angle S$, $\angle U$, and $\angle P$.



Lesson 9.3

7. Explain how you could draw a complete circle if you have only an arc of that circle as shown at right.

