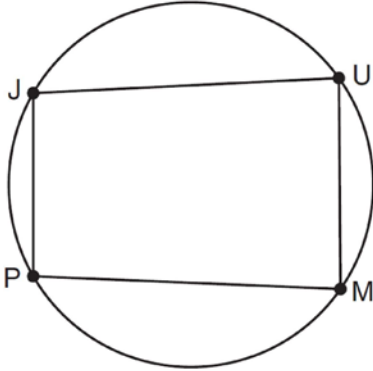


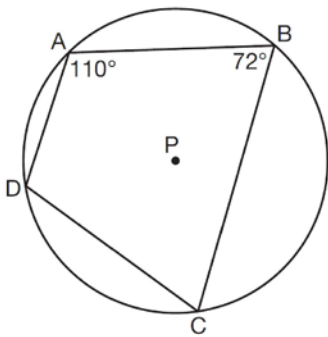
G.C.A.3: Inscribed Quadrilaterals

- 1 In the diagram below, quadrilateral $JUMP$ is inscribed in a circle..



Opposite angles J and M must be

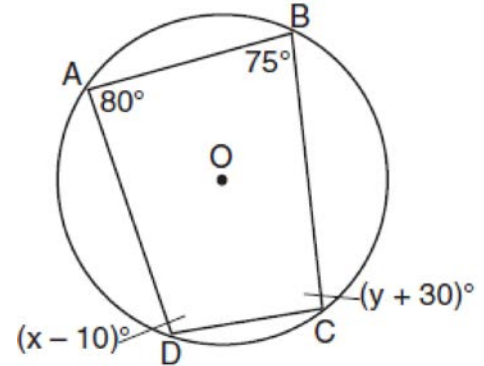
- 1) right
 - 2) complementary
 - 3) congruent
 - 4) supplementary
- 2 In the diagram below, quadrilateral $ABCD$ is inscribed in circle P .



What is $m\angle ADC$?

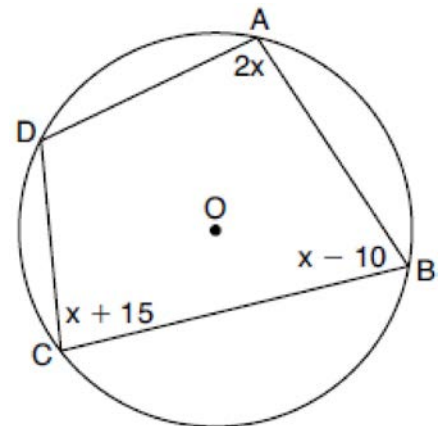
- 1) 70°
- 2) 72°
- 3) 108°
- 4) 110°

- 3 Quadrilateral $ABCD$ is inscribed in circle O , as shown below.



If $m\angle A = 80^\circ$, $m\angle B = 75^\circ$, $m\angle C = (y + 30)^\circ$, and $m\angle D = (x - 10)^\circ$, which statement is true?

- 1) $x = 85$ and $y = 50$
 - 2) $x = 90$ and $y = 45$
 - 3) $x = 110$ and $y = 75$
 - 4) $x = 115$ and $y = 70$
- 4 In the diagram below, quadrilateral $ABCD$ is inscribed in circle O , $m\angle A = (2x)^\circ$, $m\angle B = (x - 10)^\circ$, and $m\angle C = (x + 15)^\circ$.

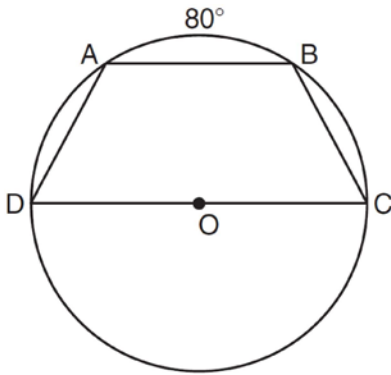


What is $m\angle D$?

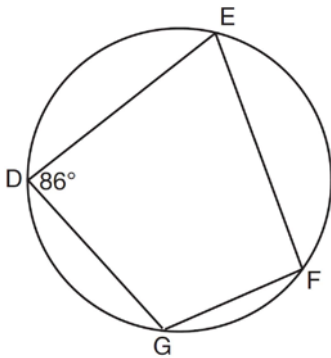
- 1) 55°
- 2) 70°
- 3) 110°
- 4) 135°

- 5 Linda is designing a circular piece of stained glass with a diameter of 7 inches. She is going to sketch a square inside the circular region. To the *nearest tenth of an inch*, the largest possible length of a side of the square is
- 1) 3.5
 - 2) 4.9
 - 3) 5.0
 - 4) 6.9

- 6 In the diagram below, trapezoid $ABCD$, with bases \overline{AB} and \overline{DC} , is inscribed in circle O , with diameter \overline{DC} . If $m\widehat{AB} = 80$, find $m\widehat{BC}$.

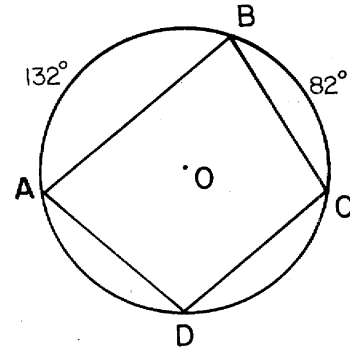


- 7 As shown in the diagram below, quadrilateral $DEFG$ is inscribed in a circle and $m\angle D = 86$.

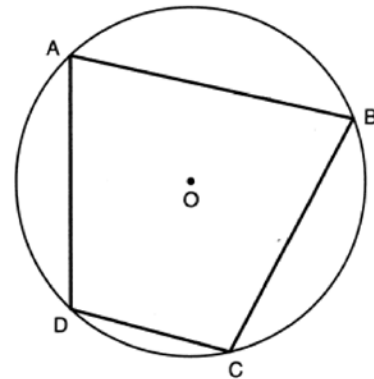


Determine and state $m\widehat{GFE}$. Determine and state $m\angle F$.

- 8 In the accompanying diagram, quadrilateral $ABCD$ is inscribed in circle O . If $m\widehat{AB} = 132$ and $m\widehat{BC} = 82$, find $m\angle ADC$.



- 9 In the diagram below, quadrilateral $ABCD$ is inscribed in circle O , and $m\widehat{CD} : m\widehat{DA} : m\widehat{AB} : m\widehat{BC} = 2 : 3 : 5 : 5$.



Determine and state $m\angle B$.

G.C.A.3: Inscribed Quadrilaterals

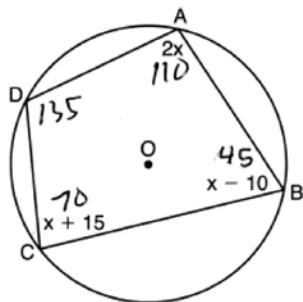
Answer Section

- 1 ANS: 4 REF: 011124ge
 2 ANS: 3 REF: 081515geo
 3 ANS: 4

Opposite angles of an inscribed quadrilateral are supplementary.

REF: 011821geo

- 4 ANS: 4



$$2x + x + 15 = 180 \quad 180 - 45 = 135$$

$$3x = 165$$

$$x = 55$$

REF: 082224geo

- 5 ANS: 2

$$s^2 + s^2 = 7^2$$

$$2s^2 = 49$$

$$s^2 = 24.5$$

$$s \approx 4.9$$

REF: 081511geo

- 6 ANS:

$$\frac{180 - 80}{2} = 50$$

REF: 081129ge

- 7 ANS:

$$86^\circ \cdot 2 = 172^\circ \quad 180^\circ - 86^\circ = 94^\circ$$

REF: 081432ge

- 8 ANS:

107

REF: 088408siii

9 ANS:

$$\frac{2+3}{15} \cdot 360 = 120 \quad \frac{120}{2} = 60$$

REF: 062226geo