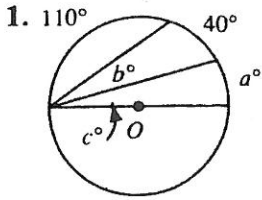


# Inscribed Angles

For use after Section 9-5

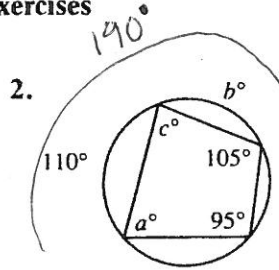
In Exercises 1-6 find the values of  $a$ ,  $b$ , and  $c$ . In Exercises 1, 3, and 6,  $O$  is the center of the circle.



$$a = \underline{30^\circ}$$

$$b = \underline{20^\circ}$$

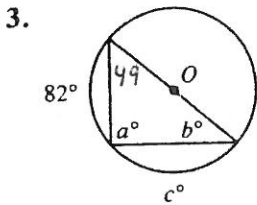
$$c = \underline{15^\circ}$$



$$a = \underline{75^\circ}$$

$$b = \underline{80^\circ}$$

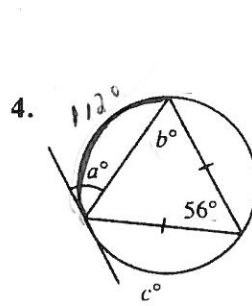
$$c = \underline{85^\circ}$$



$$a = \underline{90^\circ}$$

$$b = \underline{41^\circ}$$

$$c = \underline{242^\circ}$$

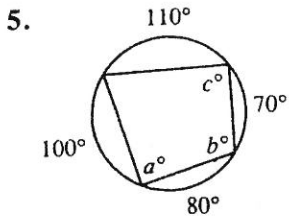


$$\begin{array}{r} 180 \\ - 56 \\ \hline 124/2 = 62 \end{array}$$

$$a = \underline{56^\circ}$$

$$b = \underline{62^\circ}$$

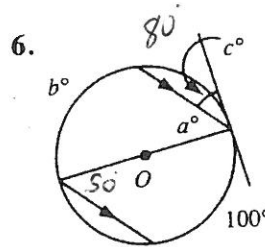
$$c = \underline{124^\circ}$$



$$a = \underline{90^\circ}$$

$$b = \underline{105^\circ}$$

$$c = \underline{90^\circ}$$



$$a = \underline{50^\circ}$$

$$b = \underline{100^\circ}$$

$$c = \underline{40^\circ}$$

9)  $130 + 122 - X = 360 - 168$   
 $252 - X = 192$   
 $-192 + X \quad -192 + X$   
 $60 = X$

10)  $75^\circ$   
 $95^\circ$   
 $140^\circ$

Solve for x.

11)  $50^\circ$   
 $110^\circ$   
 $30x$   
 $140^\circ$   
 $70^\circ$

$140 = 50 + 30x$   
 $-50 \quad -50$   
 $90 = 30x$   
 $\frac{90}{30} = \frac{30x}{30x}$   
 $3 = x$

12)  $31x + 3$   
 $192^\circ$   
 $96$

$31x + 3 = 96$   
 $31x = 93$   
 $\frac{31x}{31} = \frac{93}{31}$   
 $x = 3$

Find the measure of the arc or angle indicated.

13) Find  $m\angle NLM = 300$   
 $13x - 10$   
 $120$   
 $7x - 10$   
 $60$

$7x - 10 + 13x - 10 = 180$   
 $20x - 20 = 180$   
 $20x = 200$   
 $x = 10$

14) Find  $m\widehat{FGH} = 238^\circ$   
 $21x - 2$   
 $61^\circ$   
 $119^\circ$   
 $38x + 5$

$21x - 2 + 38x + 5 = 180$   
 $59x + 3 = 180$   
 $59x = 177$   
 $\frac{59x}{59} = \frac{177}{59}$   
 $x = 3$

Solve for x and y.

15)  $10x$   
 $110^\circ$   
 $10x - 6$   
 $4 + 18y$   
 $76$   
 $16y + 6$   
 $76$

$10x + 16y + 6 = 180$   
 $10x - 6 + 4 + 18y = 180$   
 $10x + 16y = 174$   
 $5(10x + 18y = 182)$   
 $-2y = -8$   
 $y = 4$   
 $x = 11$

16)  $7x + 1$   
 $106$   
 $6x - 10$   
 $2y + 100$   
 $2y + 74$   
 $74$

$7x + 1 + 2y + 74 = 180$   
 $7x + 2y = 105$   
 $6x - 10 + 2y + 100 = 180$   
 $6x + 2y = 90$   
 $x = 15$   
 $y = 0$