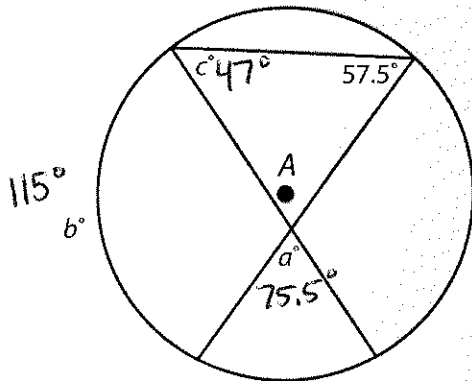


Review - Answer Key

Pre-Assessment

Circle the letter of the best answer.

1. Find the value of each variable.

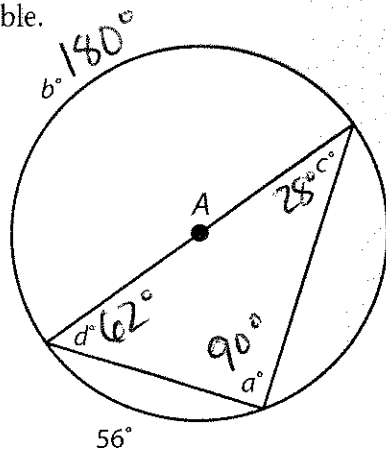


- Inscribed \angle 's are half their intercepted arc.
- \angle 's in a triangle = 180°
- vertical \angle 's =

- a. $a = 75.5^\circ, b = 115^\circ, \text{ and } c = 47^\circ$
- b. $a = 57.5^\circ, b = 94^\circ, \text{ and } c = 32.5^\circ$

- c. $a = 32.5^\circ, b = 57.5^\circ, \text{ and } c = 94^\circ$
- d. $a = 75.5^\circ, b = 55.5^\circ, \text{ and } c = 94^\circ$

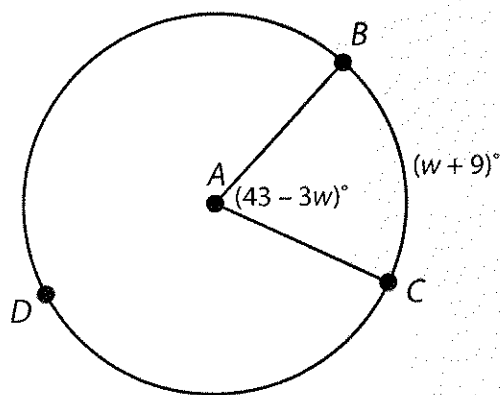
2. Find the value of each variable.



- diameter
- inscribed \angle 's
- \angle 's in Δ

- a. $a = 180^\circ, b = 180^\circ, c = 56^\circ, d = 90^\circ, \text{ and } e = 90^\circ$
- b. $a = 90^\circ, b = 90^\circ, c = 56^\circ, d = 62^\circ, \text{ and } e = 62^\circ$
- c. $a = 90^\circ, b = 180^\circ, c = 28^\circ, d = 62^\circ, \text{ and } e = 124^\circ$
- d. $a = 80^\circ, b = 90^\circ, c = 28^\circ, d = 124^\circ, \text{ and } e = 124^\circ$

3. What is the value of w ?



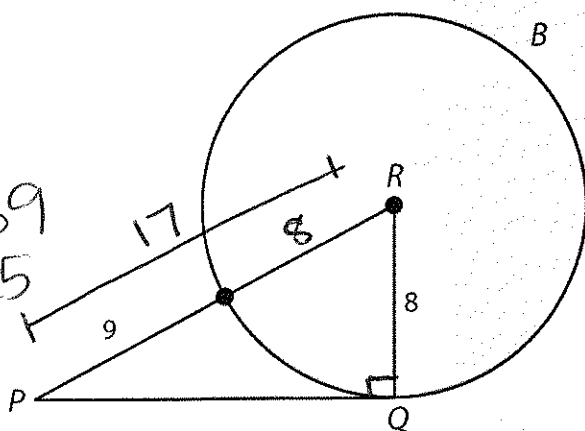
$$\begin{array}{r}
 43 - 3w = w + 9 \\
 +3w \quad +3w \\
 \hline
 43 = 4w + 9 \\
 -9 \quad -9 \\
 \hline
 34 = 4w \\
 \frac{34}{4} = \frac{4w}{4} \\
 \boxed{8.5 = w}
 \end{array}$$

- a. 7.5
- b. 8.5

- c. 9.5
- d. 10.5

4. \overline{PQ} is tangent to circle R at point Q in the diagram below. What is the length of \overline{PQ} to the nearest whole number?

$$\begin{aligned}
 8^2 + b^2 &= 17^2 \\
 64 + b^2 &= 289 \\
 b^2 &= 225 \\
 b &= 15
 \end{aligned}$$



- Tangents \perp to radius
- Pythagorean Theorem
- All radii =

- a. 4 units
- b. 10 units

- c. 12 units
- d. 15 units

5. \overline{XY} is tangent to circle Z at point Y . The slope of \overline{XY} is $-\frac{1}{2}$. What is the slope of radius \overline{ZY} ?

- a. $\frac{1}{2}$
- b. 2

- c. $-\frac{1}{2}$
- d. -2

- tangent \perp radius
- \perp slopes are opposite reciprocal

4. If a quadrilateral is inscribed in a circle, what must be true of the quadrilateral's opposite angles?

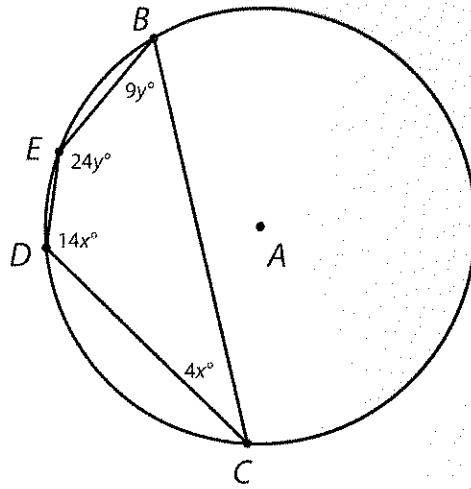
a. They must be complementary.

c. They must be supplementary.

b. They must be congruent.

d. They have no relationship.

5. Find the value of x .



$$4x + 24y = 180$$
$$14x + 9y = 180$$

sys-solv

$$x = 9$$

$$y = 6$$

a. 6

c. 36

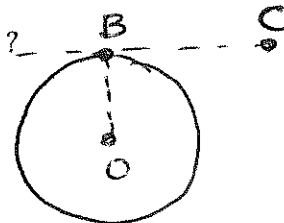
b. 9

d. 54

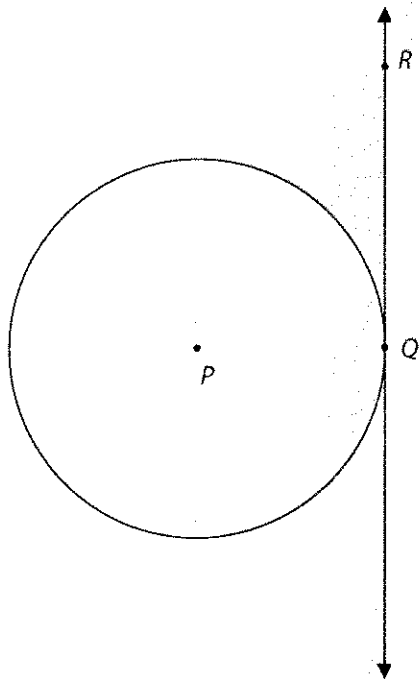
1. To construct a line tangent to circle O at point B , what must be true about \overrightarrow{BC} and radius \overline{OB} ?

- a. \overrightarrow{BC} intersects \overline{OB} at point O .
- b. \overrightarrow{BC} is perpendicular to \overline{OB} at point B .

- c. \overrightarrow{BC} is parallel to \overline{OB} at point B .
- d. \overrightarrow{BC} is congruent to \overline{OB} .



2. \overline{RQ} is tangent to circle P , as shown below. Which is NOT a step in the process for constructing the tangent?



- a. Draw a straight line from center P through point Q and beyond Q .
- b. Put the compass on point Q and set it to a width less than the distance of \overline{PQ} .
- c. Use a protractor to measure a 90° angle at point Q .
- d. Draw an arc on either side of point Q .

1. Convert 45° to radians.

a. $\frac{1}{4}$

b. $\frac{\pi}{4}$

c. 4

d. 4π

$$45 \cdot \frac{\pi}{180} = \frac{\pi}{4}$$

2. Convert $\frac{2\pi}{3}$ radians to degrees.

a. 60°

b. 90°

c. 120°

d. 270°

$$\frac{2\pi}{3} \cdot \frac{180}{\pi} = 120^\circ$$

3. A circle has a radius of 3 units. Find the radian measure of a central angle that intercepts an arc length of 12 units.

a. 36 radians

b. 8π radians

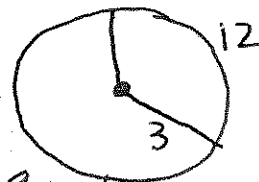
c. 4π radians

d. 4 radians

$$AL = \frac{2\pi r \theta}{360}$$

$$12 = \frac{2\pi(3)\theta}{360}$$

$$\approx 229^\circ \cdot \frac{180}{\pi} \approx 3.99 \text{ radians}$$



4. A circle has a radius of 5 units. Find the length of the arc intercepted by a central angle measuring $\frac{1}{5}$ radian.

a. $\frac{1}{5}$ unit

b. 1 unit

c. 5 units

d. 25 units

$$\frac{1}{5} \cdot \frac{180}{\pi} = 11.5^\circ \quad AL = \frac{2\pi(5)(11.5)}{360}$$

$$AL = 1.00$$

5. A circle has a radius of 12 units. Find the area of a sector with a central angle of 20° .

a. 1,440 square units

b. 16π square units

c. 8π square units

d. $\frac{36\pi}{5}$ square units

$$SA = \frac{\pi r^2 \theta}{360}$$

$$SA = \frac{\pi(12)^2(20)}{360}$$

$$SA = 8\pi$$

1. What is the area of a circle that has a circumference of 50 meters?

a. $\approx 198.94 \text{ m}^2$

b. $\approx 625 \text{ m}^2$

c. $\approx 1350 \text{ m}^2$

d. $\approx 7853.982 \text{ m}^2$

$$\pi (7.96)^2$$

$$\approx 199.06 \text{ m}^2$$

$$A = \pi r^2$$

$$C = 2\pi r$$

$$50 = 2\pi r$$

$$7.96 = r$$

2. What is the volume of a cylinder that has a radius of 20 cm and a height of 30 cm?

a. $\approx 37,699.112 \text{ cm}^3$

b. $\approx 12,000 \text{ cm}^3$

c. $\approx 1884.956 \text{ cm}^3$

d. $\approx 12,566.371 \text{ cm}^3$

$$V = \pi r^2 h$$

$$V = \pi (20)^2 (30)$$

$$V \approx 37699.11 \text{ cm}^3$$

3. What is the volume of a square pyramid that has a side length of 100 meters and a height of 50 meters?

a. $\approx 5000 \text{ m}^3$

b. $\approx 500,000 \text{ m}^3$

c. $\approx 166,667 \text{ m}^3$

d. $\approx 83,333 \text{ m}^3$

$$V = \frac{1}{3} B h$$

$$V = \frac{1}{3} (s^2) (h)$$

$$V = \frac{1}{3} (100)^2 (50) \approx 1666666 \text{ m}^3$$

4. What is the volume of a cone that has a circumference of 50 meters and a height of 30 meters?

a. $\approx 633.26 \text{ m}^3$

b. $\approx 500 \text{ m}^3$

c. $\approx 1989.44 \text{ m}^3$

d. $\approx 25,000 \text{ m}^3$

$$V = \frac{1}{3} \pi r^2 (h)$$

$$V = \frac{1}{3} \pi (7.96)^2 (30)$$

$$\approx 1990.56$$

$$\frac{50 = 2\pi r}{2\pi} \quad \frac{50}{2\pi} = r$$

$$7.96 = r$$

5. A golf ball has a diameter of 1.68 in. What is the volume of the golf ball?

a. 11.82 in^3

b. 2.96 in^3

c. 7.04 in^3

d. 3.52 in^3

$$V = \frac{4}{3} \pi r^3$$

$$= \frac{4}{3} \pi (.84)^3$$

$$\approx 2.48$$