

1) Answer: C

Explanation: As per the arc addition postulate,

$$m\widehat{PR} = m\widehat{PQ} + m\widehat{QR}$$

Using the respective measurement of these arcs:

$$100 = (x + 5) + (x + 9)$$

Let us now solve for x in the derived equation above:

$$100 = 2x + 14$$

$$-14 + 100 = 2x$$

$$86 = 2x$$

$$\frac{86}{2} = \frac{2x}{2}$$

$$43 = x$$

$$x = 43$$

Transposition method

Dividing both sides of the equation by 2

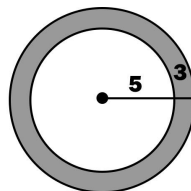
Thus, the value of x in the problem is 43.

2) Answer: B

Explanation: The circumference of a circle is just the product of the circle's diameter and π . In the given figure, the diameter of the circle is 100 cm. Therefore, the circumference of it should be 100π cm.

3) Answer: B

Explanation: Let us take a look at the given illustration again:



Notice that we can obtain the area of the shaded region by subtracting the area of the smaller circle or the circle with a radius of 5 units from the area of the larger circle or the circle with a radius of 8 units ($5 + 3 = 8$ units).

Mathematically,

$$A_{\text{shaded region}} = A_{\text{larger circle}} - A_{\text{smaller circle}}$$

Let us compute the area of the larger circle first.

Recall that the area of a circle can be calculated using the formula $A = \pi r^2$

So, the radius of the larger circle is 8 units long. Hence, its area is:

$$\begin{aligned} A &= \pi r^2 \\ A &= (3.14)(8)^2 \\ A &= (3.14)(64) \\ A &= 200.96 \end{aligned}$$

Thus, the area of the larger circle is 200.96 square units.

Now, let us compute for the area of the smaller circle:

The radius of the smaller circle is 5 units. Thus, its area is:

$$\begin{aligned} A &= \pi r^2 \\ A &= (3.14)(5)^2 \\ A &= (3.14)(25) \\ A &= 78.5 \end{aligned}$$

Hence, the area of the smaller circle is 78.5 square units.

We can now obtain the area of the shaded region by subtracting the area of the smaller circle from the area of the larger circle.

$$A_{\text{shaded region}} = 200.96 - 78.5$$

$$A_{\text{shaded region}} = 122.46$$

Thus, the area of the shaded region is 122.46 square units.

4) Answer: B

Explanation: The measure of the inscribed angle is equal to $\frac{1}{2}$ of its intercepted arc. Thus, in the provided illustration, the measurement of the arc x is just twice of the angle that intercepts it.

Thus, the value of x should be 30° .

5) Answer: B

Explanation: To compute the area of a circle, we must have the length of the radius of that circle. The problem provided us the diameter of the circle which is 28 units long. The length of the radius is equal to half of the length of the diameter. Therefore, the radius of the circle is just $28/2 = 14$ units long.

The area of a circle can be calculated using the formula: $A = \pi r^2$

We have $r = 14$. Thus:

$$A = \pi r^2$$

$$A = \pi(14)^2$$

$$A = 196\pi$$

Thus, the area of the circle is 196π square units.