



Ottocento Lesson #18 Circles Worksheet

Video Solutions at: <https://youtu.be/KF-YEQaSjCA>

Question 1

The circumference of a circle is 20π . What is the area of the circle? (Express your answer in terms of π)

Question 2

An angle has a measure of 240° . What is the measure of this angle, in radians?

Question 3

An angle has a measure of $\frac{3\pi}{4}$ radians. What is the measure of this angle, in degrees?



Question 4

The measure of angle J is $\frac{11\pi}{6}$ radians. The measure of angle K is $\frac{5\pi}{4}$ radians less than the measure of angle J . What is the measure of angle K , in degrees?

Question 5

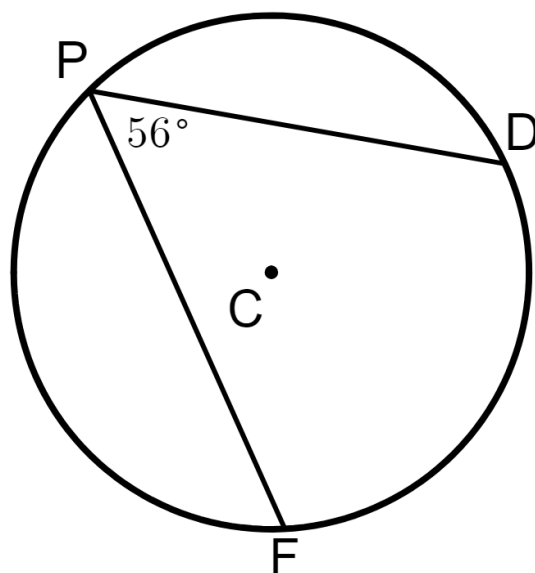
What fraction of a circle is represented by an arc with an arc measure of 195° ?

Question 6

Point Q is the center of a circle. The measure of arc LM on this circle is 76° . What is the measure, in degrees, of its associated angle LQM ?

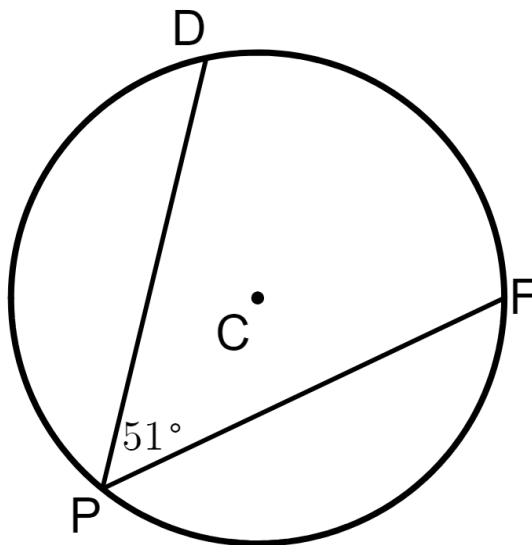


Question 7



What is the measure of arc DF , in radians? (Express your answer in terms of π)

Question 8



The circle shown has a radius with a length of 120. What is the length of arc DF ? (Express your answer in terms of π)

Question 9

A circle has a diameter with a length of 34. An arc of the circle has a measure of 240° . What is the area of the associated sector? (Express your answer in terms of π)

Question 10

The area of a sector is 20π . The associated central angle has a measure of 100° . What is the area of the circle? (Express your answer in terms of π)

Question 11

The circumference of a circle is 25π . An arc of the circle has an associated central angle with a measure of 104° . What is the length of the arc? (Express your answer in terms of π)



Question 12

$$(x + 8)^2 + y^2 = 36$$

The equation above gives a circle in the xy -plane.

What are the coordinates of the center of the circle?

What is the radius of the circle?

What is the circumference of the circle?

Question 13

$$(x - 4)^2 + (y + 9)^2 = 75$$

The equation above gives a circle in the xy -plane.

What are the coordinates of the center of the circle?

What is the length of the diameter of the circle? (Do not round)

What is the area of the circle? (Express your answer in terms of π)



Question 14

$$3x^2 + 3y^2 + 12x - 78y + 183 = 0$$

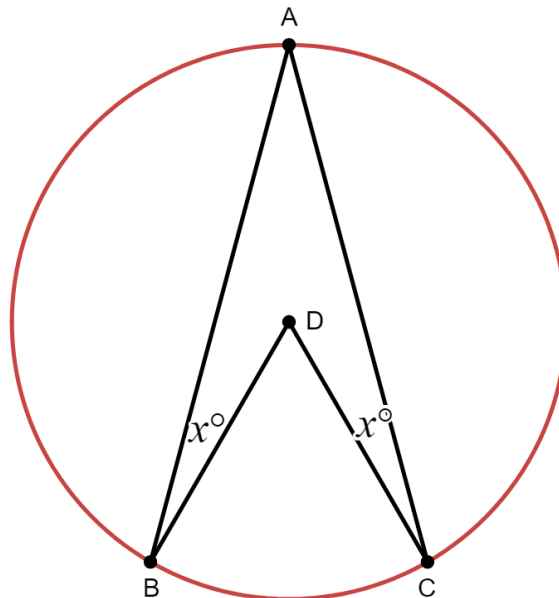
The equation above gives a circle in the xy -plane.

What are the coordinates of the center of the circle?

What is the length of the radius of the circle? (Do not round)

If a square is inscribed in the circle, what is the area of the square?

Question 15



Point D is the center of the circle. The measure of angle BDC is 70° . What is the value of x ?



Question 16

$$(x + 6)^2 + (y + 3)^2 = 117$$

The equation above gives a circle in the xy -plane. Line p is tangent to this circle at the point $(-15, 3)$. What is the slope of line p ? The function $f(x)$ gives the graph of line p . Write an equation for $f(x)$.

Question 17

A circle in the xy -plane has its center at $(-7, 11)$. Line w is tangent to this circle at the point $(-1, 19)$. Which of the following points also lies on line w ?

- A) $(-10, 26)$
- B) $(-8, 25)$
- C) $(13, 10)$
- D) $(15, 7)$

Question 18

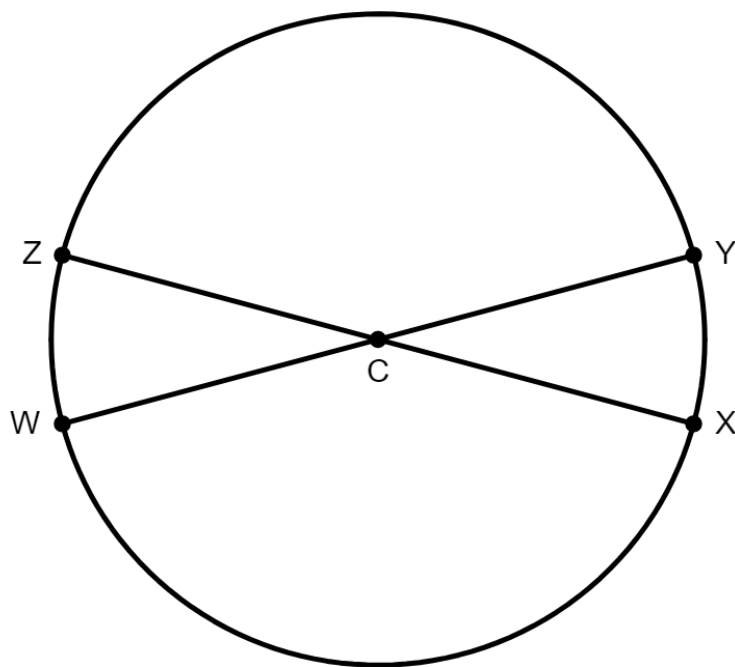
A circle has center E , and points V and W lie on the circle. Line segments VF and WF are tangent to the circle at points V and W , respectively. The circle has an area of 64π square inches and the perimeter of quadrilateral $EVFW$ is 46 inches.

What is the distance between points E and F , in inches?

What is the area of quadrilateral $EVWF$, in square inches?



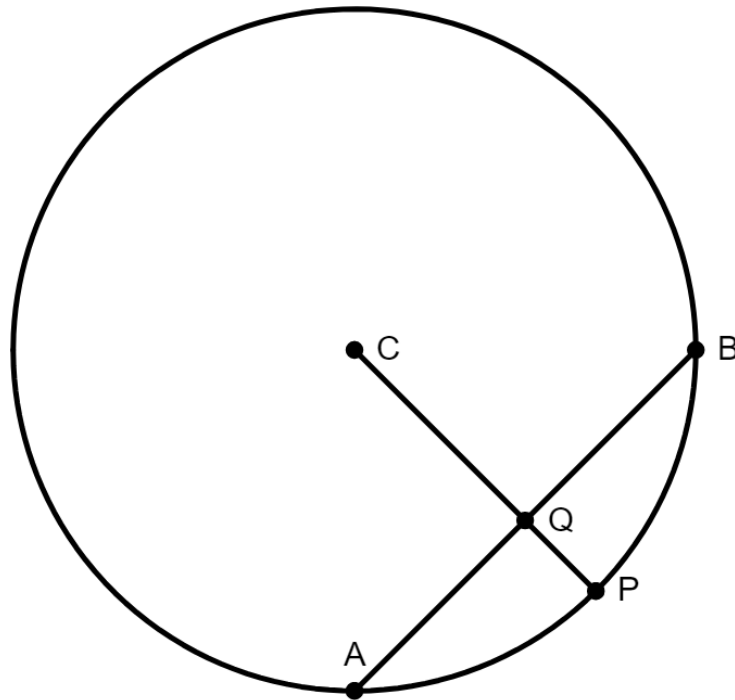
Question 19



The circle shown has center C , circumference 84π , and diameters $\overline{XZ}$ and $\overline{WY}$. The length of arc ZY is 5 times the length of arc YX . What is the length of arc WZ ?



Question 20

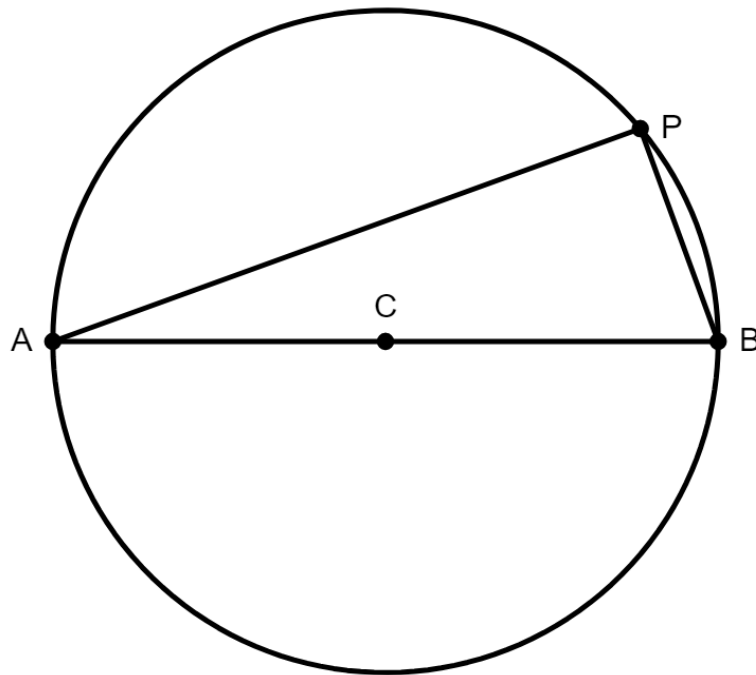


Note: Figure not drawn to scale.

In the circle shown, point C is the center, and radius $\overline{PC}$ bisects $\overline{AB}$ at point Q . The diameter of the circle has a length of 22. Line segment QP has a length of 3. If the length of line segment AQ is equal to $\sqrt{x}$, what is the value of x ?



Question 21

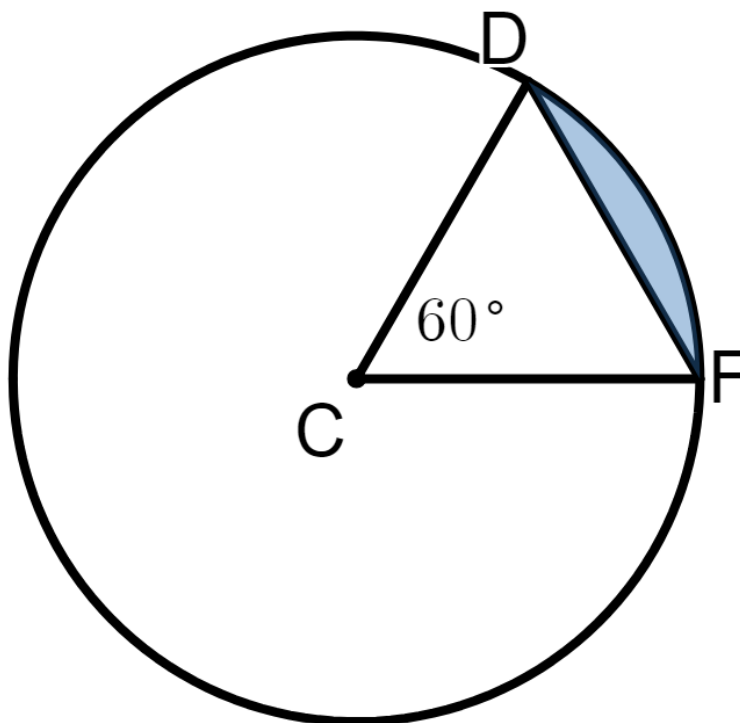


The circle shown has center C and diameter $\overline{AB}$.

If $\sin(m\angle PAB) = \frac{39}{89}$, what is the value of $\cos(m\angle PBA)$?



Question 22



Point C is the center of the circle. The length of line segment CD is 12. What is the area of the shaded region? Write your answer without rounding, then round your answer to the nearest hundredth.

Question 23

In the xy -plane a circle has center L with coordinates (h, k) . Points T and U lie on the circle. Point T has coordinates $(h + 3, k - \sqrt{87})$, and $\angle TLU$ is a right angle. What is the length of $\overline{TU}$? Express your answer as a simplified radical, then round your answer to the nearest hundredth.