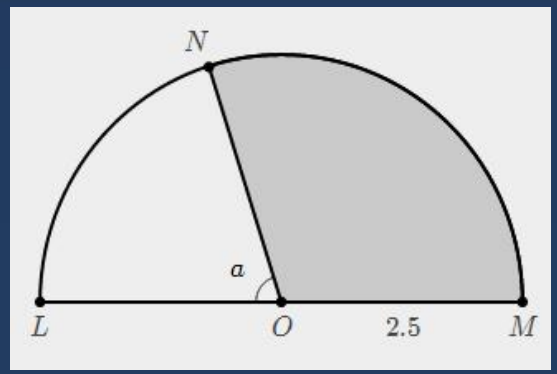
koolearn
新东方在线

Circle theorems

1.The semicircle shown at left has center at point O. The shaded sector of the circle formed by angle NOM has area 6.25. The radius of the semicircle is 2.5. What is the radian measure of angle LON, shown by a in the figure?

A. 2
B. 2.5
C. $\pi - 2$
D. $\pi - 2.5$



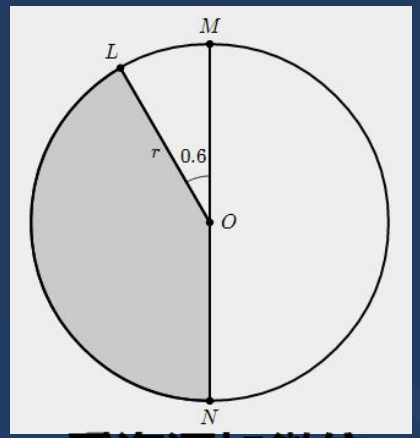
2.The circle shown at left has its center at point O. Line segment $\overline{MN}$ is a diameter. The measure of acute angle LOM is 0.6 radians. The shaded sector of the circle formed by the obtuse angle LON has area 6. What is the radius, r, of the circle?

A. $\frac{3}{\pi-0.6}$

B. $\frac{12}{\pi-0.6}$

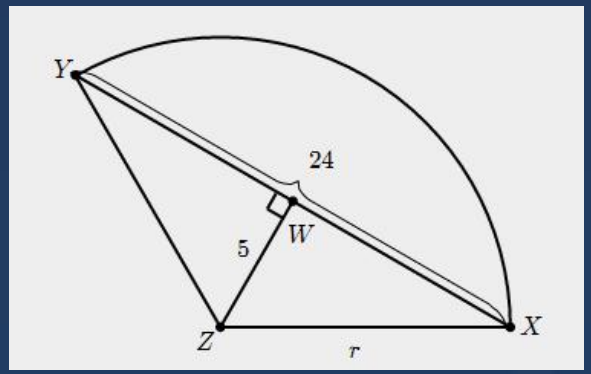
C. $\sqrt{\frac{3}{\pi-0.6}}$

D. $\sqrt{\frac{12}{\pi-0.6}}$



3.The sector of a circle shown at left has center Z. The length of the chord $\overline{XY}$ is 24. The distance from Z to the chord $\overline{XY}$ is 5, shown by $\overline{WZ}$. Finally, $\overline{WZ}$ is perpendicular to $\overline{XY}$ and bisects $\overline{XY}$ at W. What is the radius, r, of the circle?

A. $\sqrt{120}$
B. 13
C. 17
D. $\sqrt{601}$



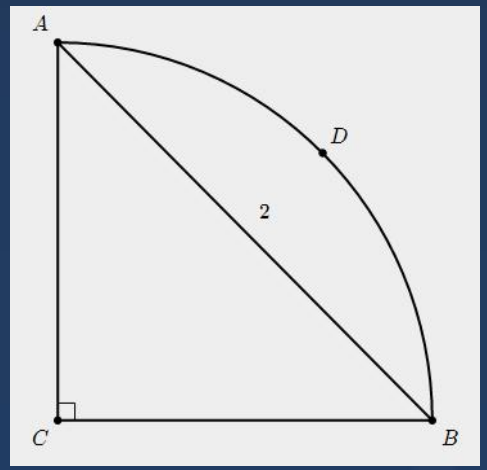
4.A metal wedge to be used as a corner brace has the shape of the quarter circle shown at left. Angle ACB is a right angle, and the length of the chord $\overline{AB}$ is 2 centimeters (cm). What is the length of the arc ADB?

A. $\frac{\pi}{2}$ cm

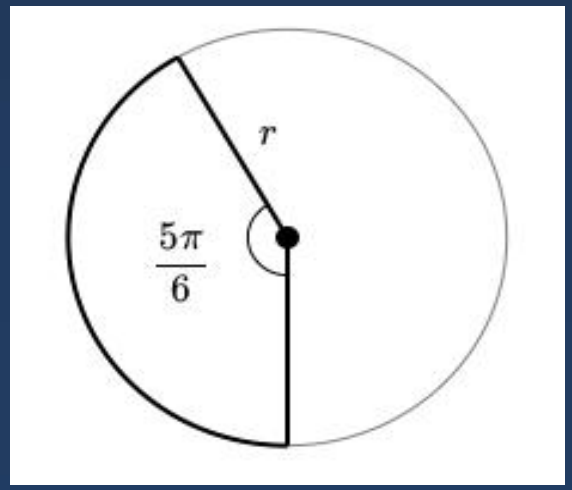
B. $\frac{\sqrt{2}\pi}{2}$ cm

C. π cm

D. $\sqrt{2}\pi$ cm

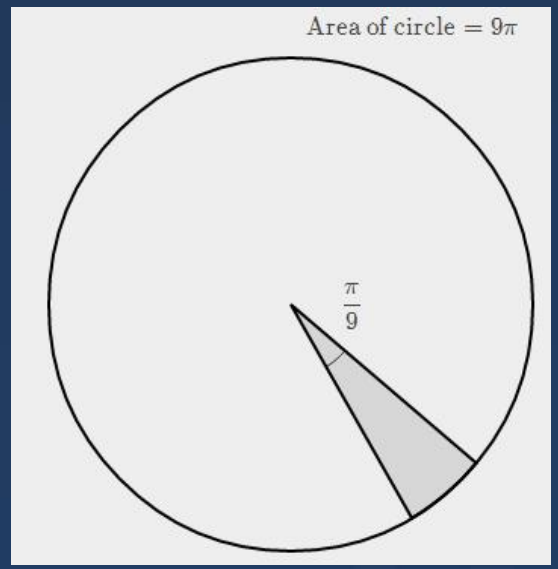


5.An arc is subtended by a central angle measuring $\frac{5\pi}{6}$ radians. What fraction of the circumference is this arc?



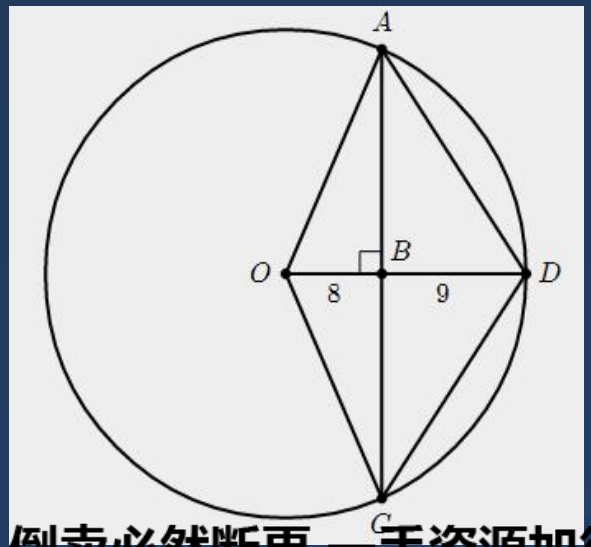
6.The circle shown to the left with area 9π has a sector with a central angle of $\frac{1}{9\pi}$ radians.
What is the area of the sector?

A. $\frac{1}{2}\pi$
B. $\frac{1}{162}\pi$
C. 2π
D. 162π



7.The circle shown at left has center at point O. Chord $\overline{AC}$ is perpendicular to radius $\overline{OD}$ and intersects $\overline{OD}$ at point B. Line segment $\overline{OB}$ has length 8 and line segment $\overline{BD}$ has length 9. What is the length of chord $\overline{AC}$?

A. $2\sqrt{145}$
B. 30
C. $24\sqrt{2}$
D. 34



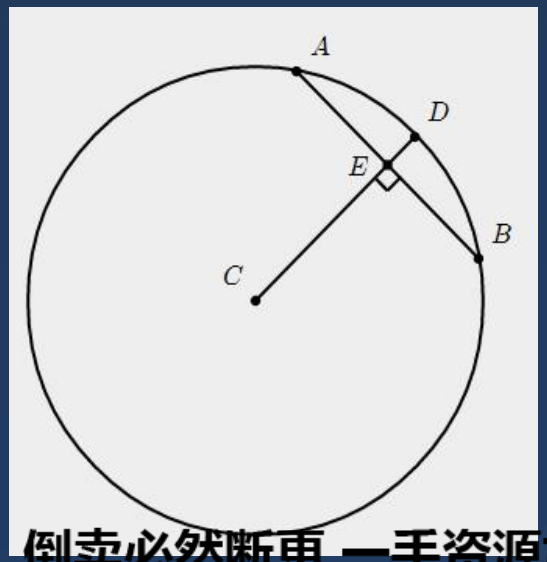
8.In the figure at left, point C is the center of the circle. Line segment $\overline{CD}$ is perpendicular to line segment $\overline{AB}$ and bisects $\overline{AB}$ at the point E. It is known that $\overline{AB}$ and $\overline{CD}$ have length 10. What is the length of $\overline{CE}$?

A. 5

B. $3\sqrt{3}$

C. 7.5

D. $5\sqrt{3}$



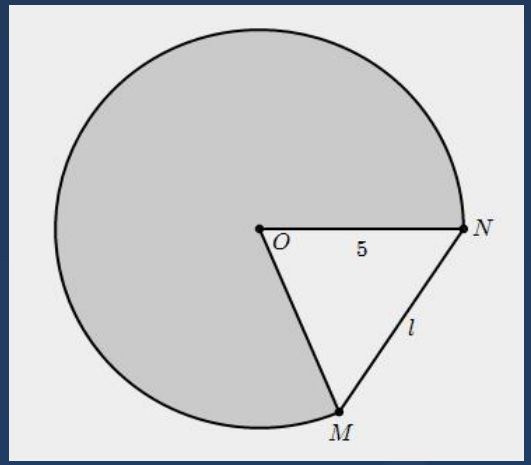
9.The figure at left shows a sector of a circle of radius 5 with a center at point O. The area of the shaded sector is 20π. The arc of the sector has endpoints M and N. What is the length, l, of line segment $\overline{MN}$?

A. $5\sin(\frac{\pi}{5})$

B. $10\sin(\frac{\pi}{5})$

C. $5\sin(\frac{2}{5}\pi)$

D. $10\sin(\frac{2}{5}\pi)$



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Thanks

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