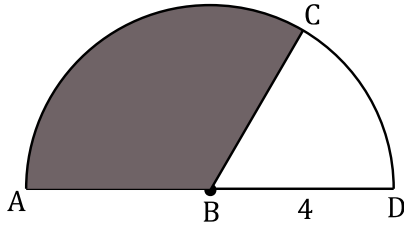


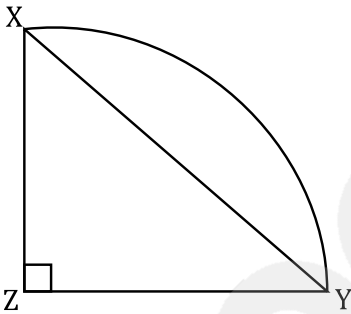
39 SAT Circle Theorems

1) In the diagram below, a half section of a circle is shown with a sector created by angle CBD. The radius of the circle is 4 inches, while the shaded region of ABC has an area of 16. What is the measure, in radians, of angle CBD? (*no calculator*)



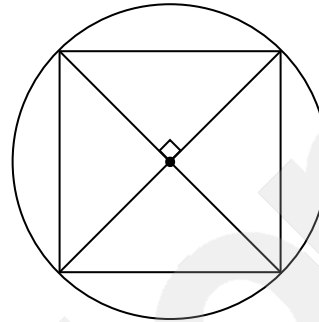
- A) $\pi - 2$
- B) $\frac{5\pi}{3}$
- C) 2
- D) π

2) Triangle XYZ is an isosceles triangle with a perimeter of $6 + 3\sqrt{2}$ inches. What is the length of arc XY? (*no calculator*)



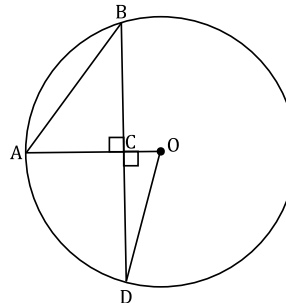
- A) $3\sqrt{2}$ inches
- B) $\sqrt{2}$ inches
- C) $\frac{3\pi}{2}$ inches
- D) 3π inches

3) In the diagram below, a square is inscribed within a circle. The area of the circle is 64π feet squared. What is the perimeter of the inscribed square? (*no calculator*)



- A) 128 feet
- B) $3\sqrt{5}$ feet
- C) $8\sqrt{2}$ feet
- D) $32\sqrt{2}$ feet

4) The circle below has a radius of 15 meters. Chord AB has a length of 5 meters while chord BD has a length of 8 meters. What is the length of CO? (diagram and measures are not at scale) (*no calculator*)

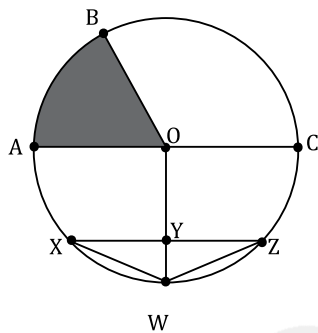


- A) 10 meters
- B) 15 meters
- C) 12 meters
- D) 5 meters

5) A circle has a radius of 6 inches and a central angle that intercepts an arc with a length of 24. What is the measure, in radians, of this central angle? (*no calculator*)

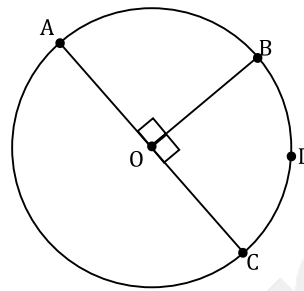
- A) π radians
- B) 6 radians
- C) 4 radians
- D) 2 radians

6) The area of the shaded region of the circle below is 18 sq. ft. The measure of angle AOB is 1 radian. Furthermore, Triangles XYW and ZYW are congruent right triangles with OY having a length of 4 feet. If the length of chord XW is 5 feet, what is the length of chord XZ? (*no calculator*)



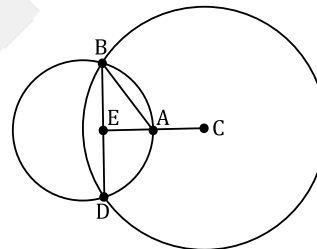
- A) 6 feet
- B) $2\sqrt{21}$ feet
- C) $\sqrt{21}$ feet
- D) 8 feet

7) What is the length of arc BDC if the area of the circle is 64π ? (*no calculator*)



- A) 4
- B) 4π
- C) 8π
- D) 8

8) Two circles overlap each other in the diagram below. If the circumference of the larger circle is 20π feet and the length of EC is 8 feet, with point A being the mid-point of EC, what is the area of right triangle BAE? (*no calculator*)



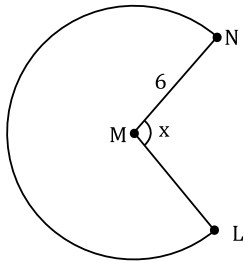
- A) $12\pi \text{ ft}^2$
- B) 6 ft^2
- C) 12 ft^2
- D) 24 ft^2

39 SAT Circle Theorems

9) A circle has a diameter of 50 feet and a central angle that measures 6 radians. What is the length, in feet, of the arc that is intercepted by the central angle? (*no calculator*)

- A) 25 feet
- B) 300 feet
- C) 50 feet
- D) 150 feet

10) What is the area of the following sector of a circle if the radius is 6 inches and the measure of angle x is 100 degrees? (*no calculator*)



- A) 34 in^2
- B) $26\pi \text{ in}^2$
- C) $10\pi \text{ in}^2$
- D) $36\pi \text{ in}^2$