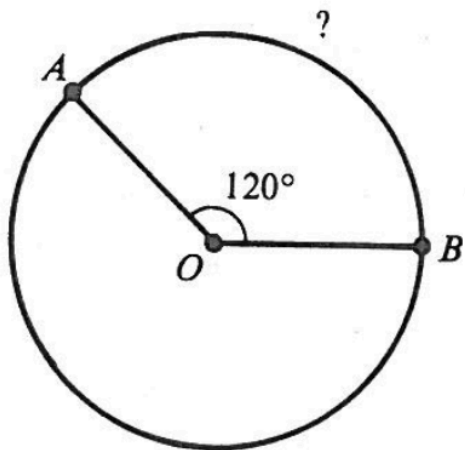


40. If the circumference of the circle below is 93 parsecs, and O is the center of the circle, how many parsecs long is minor arc \widehat{AB} ?



F

- F. 31
- G. 31π
- H. $\frac{93}{\pi}$
- J. 213
- K. 11,160

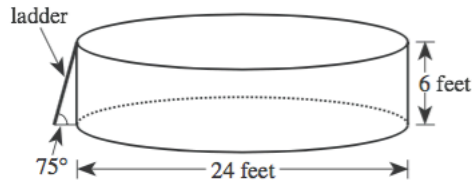
Central angle is 120

$$\frac{120^\circ}{360^\circ} = \frac{\text{arc length}}{\text{Circumference}}$$

$$\frac{120^\circ}{360^\circ} = \frac{\text{arc length}}{93}$$

$$\frac{1}{3} = \frac{\text{arc}}{93}$$

The youth center has installed a swimming pool on level ground. The pool is a right circular cylinder with a diameter of 24 feet and a height of 6 feet. A diagram of the pool and its entry ladder is shown below.

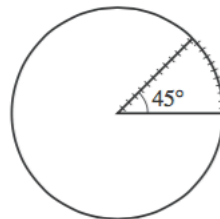


29. To the nearest cubic foot, what is the volume of water that will be in the pool when it is filled with water to a depth of 5 feet?

(Note: The volume of a cylinder is given by $\pi r^2 h$, where r is the radius and h is the height.)

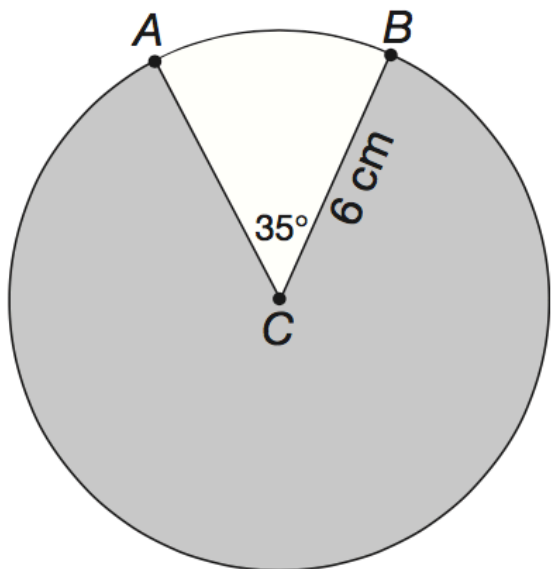
- A. 942
- B. 1,885
- C. 2,262
- D. 9,047
- E. 11,310

30. A plastic cover is made for the pool. The cover will rest on the top of the pool and will include a wedge-shaped flap that forms a 45° angle at the center of the cover, as shown in the figure below. A zipper will go along 1 side of the wedge-shaped flap and around the arc. Which of the following is closest to the length, in feet, of the zipper?



- F. 17
- G. 22
- H. 24
- J. 29
- K. 57

15. \overline{AC} and \overline{BC} are both radii of circle C and have a length of 6 cm. The measure of $\angle ACB$ is 35° . Find the area of the shaded region.



- a. $\frac{79}{2}\pi$
b. $\frac{7}{2}\pi$
c. 36π
d. $\frac{65}{2}\pi$
e. 4π