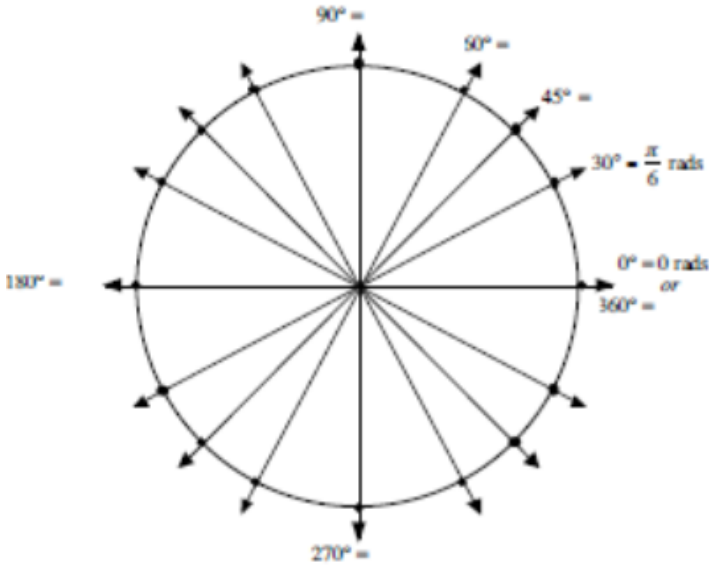


Lesson 2: Angular Measure - Radians

Question #1

Reference Q.12373

The diagram shows a series of rotation angles in standard position. The lines in the diagram are symmetrical about both the x-axis and the y-axis. Complete the diagram by determining both the degree measure and the radian measure at the end of each line.



Question #2

Reference Q.12374

Convert from radians to degrees.

- $\frac{\pi}{2}$
- $\frac{\pi}{6}$
- $-\frac{4\pi}{3}$
- $\frac{3\pi}{4}$
- $-\frac{5\pi}{6}$

Question #3

Reference Q.12375

Convert from degrees to radians. Give the answers to 1 decimal place.

- 50°
- 205°
- 57.3°
- 250°

Question #4

Reference Q.12376

Convert from radians to degrees. Give the answer to the nearest tenth.

- 0.5 radians
- 3.1 radians
- 1.8π radians

Question #5

Reference Q.12377

In each of the following

- draw the angle θ in standard position
- state the principal angle
- determine one positive and one negative coterminal angle for the angle θ
- write an expression involving the principal angle that represents all angles in the domain $\theta \in \mathbb{R}$ that are coterminal with the given angle.

a. $\theta = \frac{5\pi}{4}$

-
-
-
-
-

b. $\theta = \frac{11\pi}{6}$

-
-
-
-
-
-

c. $\theta = -\frac{2\pi}{3}$

-
-
-
-
-
-
-

d. $\theta = \frac{14\pi}{3}$

-
-
-
-
-
-
-
-

Question #6

Reference Q.12378

Determine the reference angle for the following rotation angles.

- $\frac{7\pi}{6}$
- $\frac{3\pi}{4}$
- $-\frac{5\pi}{3}$
- $-\frac{\pi}{6}$
- $\frac{11\pi}{6}$
- 5π

Question #7

Reference Q.12379

Determine the rotation angle given the reference angle and the quadrant

Reference Angle	Quadrant	Rotation Angle
$\frac{\pi}{3}$	3	
$\frac{\pi}{8}$	1	
$\frac{\pi}{6}$	4	
$\frac{\pi}{12}$	2	
$\frac{\pi}{2}$	between 3 and 4	

Question #8

Reference Q.12380

A circle has a radius of 8 cm. Determine (in radians) the measure of the sector angle on an arc of length 5.6 cm.

Question #9

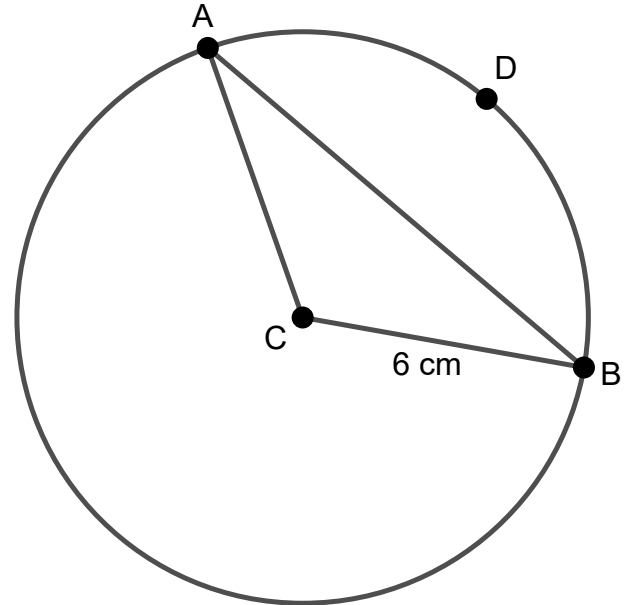
Reference Q.12381

Calculate the arc length (to the nearest tenth of a metre) of a sector of a circle with radius 8.4 m if the sector angle is 80° .

Question #10

Reference Q.12382

In the diagram, the circle with center C has a radius of 6 cm. Determine the length of arc ADB, to the nearest tenth of a cm, if $\angle CAB = \frac{\pi}{8}$.



Question #11

Reference Q.12383

A pendulum swings through an angle of 45° . Find the length of the pendulum (to the nearest cm) if the end of the pendulum swings through an arc of length 32 cm.

Question #12

Reference Q.12384

An angle with radian measure 2.36 has degree measure of
 A. 424.80
 B. 135.22
 C. 67.61
 D. 0.04

🔍 **Question #13**

Reference Q.12385

An arc of a circle subtends a central angle of x° . If the length of the arc is 1.2 cm and the diameter of the circle is 4 cm, then the value of x to the nearest whole number is

- A. 17
- B. 34
- C. 54
- D. 108

🔍 **Question #14**

Reference Q.12386

To the nearest tenth of a degree, $\frac{3\pi}{8}$ rad is equal to ____.

🔍 **Question #15**

Reference Q.12387

An arc DE of a circle, centre O, is $\frac{1}{6}$ of the circumference. The size of $\angle DOE$, to the nearest one hundredth of a radian, is ____.

🔍 **Question #16**

Reference Q.12388

A person on a Ferris wheel moves a distance of 5 metres from a position P to position Q. If the diameter of the wheel is 18 metres, the measure of the central angle, to the nearest tenth of a degree, is ____.

🔍 **Question #17**

Reference Q.12389

A satellite makes one complete revolution of the earth in 90 minutes. Assume that the orbit is circular and that the satellite is situated 280 km above the equator. If the radius of the earth at the equator is 6400 km, then the speed of the satellite, in kilometres per second, to the nearest one hundredth, is ____.