# VIVEK TUTORIALS

X (English)

(Special Test)

Mathematics Part - II-(7)

DATE: 21-02-19

TIME: 1 Hr

MARKS: 40

SEAT NO:

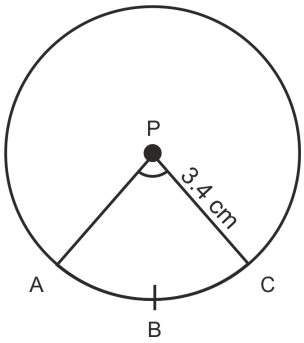
Q.1 Multiple Choice Questions 1

1 Find the ratio of the volumes of a cylinder and a cone having equal radius and equal height.

a. 1 : 2 b. 2 : 1 c. 1 : 3 d. 3 : 1

Q.2 Attempt the following 4

1




In figure, radius of circle is 3.4 cm and perimeter of sector P-ABC is 12.8 cm. Find A(P-ABC).

Given : Radius of circle $= r = 3.4$ cm

Perimeter of sector $= 12.8$ cm

: Perimeter = length of arc + 2 × _____

∴ Length of arc = _____ - 2×radius of circle

$= 12.8 - 3.4 - 3.4$

length of arc = _____ ... (1)

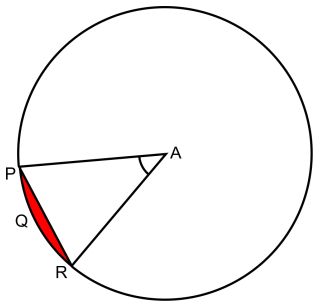
We know that, area of sector $= \frac{\text{length of arc} \times \text{radius of circle}}{2}$

A(P-ABC)= _____

= _____ $cm^2$

A(P-ABC) is _____ $cm^2$

2 In the figure, if A is the centre of the circle. ∠PAR = 30°, AP = 7.5, find the area of the segment PQR ($\pi = 3.14$)




Area of shaded region $= r^2 \left(\frac{\pi\theta}{360} - \frac{\sin\theta}{2}\right)$

$= \_\_\_\_^2 \left[\frac{\pi \times 30}{360} - \frac{\sin 30}{2}\right]$

$= \left(\frac{15}{2}\right)^2 \left(\frac{\pi}{12} - \frac{1}{4}\right)$

$= \frac{225}{4} \times$ _____

$= \frac{225 \times 0.14}{4 \times 12}$

$=$ _____

$= 9.3 \times$ _____

$=$ _____ $cm^2$

Q.3 Solve the following 4

1 Diagonal of a square is 20 cm. Find the length and perimeter of the square.

2 The diameter of a circle is 10 cm. Find the length of the arc, when the corresponding central angle is 144° ($\pi$ = 3.14).

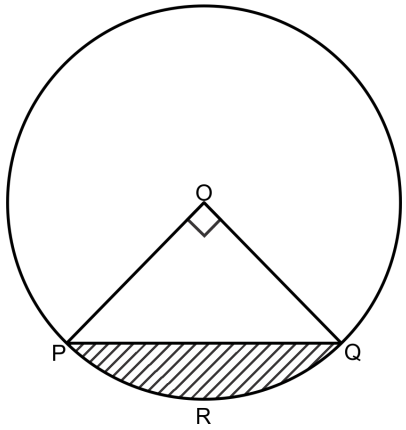
Q.4 Answer the following 4

1 Measure of an arc of a circle is $80^o$ cm and its radius is 18 cm. Find the length of the arc. ($\pi$ = 3.14 )

2 Find the length of an arc if measure of the arc is 90° and its radius is 14 cm.

Q.5 Solve the following 6

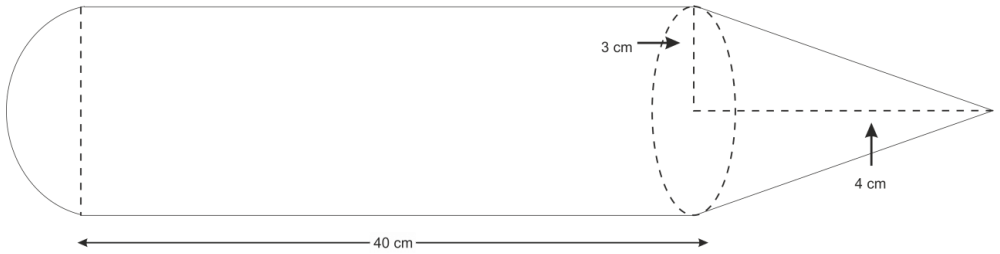
1 In the figure, O is the centre of the circle. ∠POQ = 90°. The area of the shaded region is 126 $cm^2$. Find the radius of the circle.




2 The total surface area of a cone is 71.28 $cm^2$. Find the volume of the cone, if the diameter of the base is 5.6 cm.

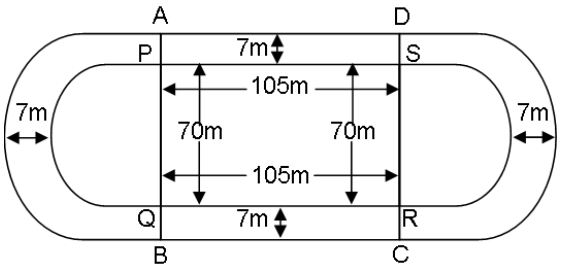
Q.6 Answer the following 12

1




In the figure, a toy made from a hemisphere, a cylinder and a cone is shown. Find the total area of the toy.

2 The given figure depicts a racing track whose left and right ends are semicircular. The distance between two inner parallel line segemnts is 70 m and they are 105 m long. if the track is 7 m wide, find the difference in the lengths of the inner edge and outer edge of the track



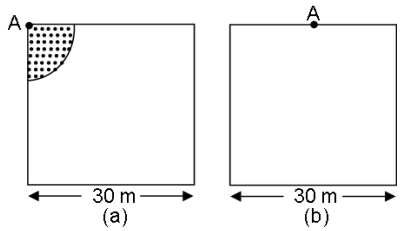

3 A tin maker converts a cubical metallic box into 10 cylindrical tins. Side of the cube is 50 cm and radius of the cylinder is 7 cm. Find the height of each cylinder so made, if the wastage of 12% is incurred in the process.

Q.7 Answer the following 9

1 The radius of a metallic sphere is 9 cm. It was melted to make a wire of diameter 4 mm. Find the length of the wire.

2 A horse is tied to a pole fixed at one corner of a 30 m × 30 m square field of grass by a 10m long rope.
(i) Find the area of that part of the field in which the horse can graze.

(ii) What will be the area of the field in which the horse can graze, if the pole was fixed at the middle of the side ? ($\hat{I}$ = 3.14)




3 A chord PQ of a circle with radius 15cm$^2$ subtends an angle of 60° with the centre of the circle. Find the area of the minor as well as the major segment.
($\pi$ = 3.14, $\sqrt{3}$ = 1.73)