



SECTION - A

Q.1 What is the sum of first five positive integers divisible by 6. [02]

OR

Which term of the A.P. 3, 8, 13, 18 is 78?

Q.2 Solve the factorization method. [02]

$$2x^2 - x + \frac{1}{8} = 0$$

Q.3 From a point Q the length of the tangent to a circle is 24 cm and the distance of Q from the centre is 25 cm. Find the radius of circle. [02]

Q.4 The curved surface area of a right circular cone of a height 15 cm and base diameter 16 cm. [02]

Q.5 Find mode of the following distribution [02]

Class	25-30	30-35	35-40	40-45	45-50	50-55
Frequency	25	34	50	42	38	14

Q.6 Draw a line segment of length 7.6 cm divide in the ratio 5 : 8. [02]

OR

Draw a circle of radius 6 cm from a point 10 cm away from its centre.

Construct the pair of tangents to the circle and measure their lengths.

SECTION - B

- Q.7 The distribution below gives the weights of 30 students of a class. find the median weight of the students. [03]

Weight (kg)	40-45	45-50	50-55	55-60	60-65	65-70	70-75
No. of Students	2	3	8	6	6	3	2

- Q.8 Construct a triangle similar to given equilateral ΔPQR with side 5 cm such that each of it's side is $\frac{6}{7}$ of the corresponding sides of ΔPQR [03]

- Q.9 Consider the following distribution of daily wages of 50 workers of a factory [03]

Daily wages (Rs.)	100-120	120-140	140-160	160-180	180-200
No. of Workers	12	14	8	6	10

find mean by assume mean method.

- Q.10 The angle of elevation of the top of a tower from a point on the ground, which is 30 M away from the foot of the tower is 30° . Find the height of the tower [03]

OR

From a point P on the ground the angle of elevation of the top of a tower is 30° and that of the top of flagpole fixed on the top of the tower is 60° .

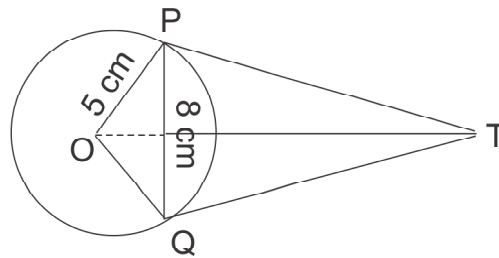
If the length of the flagpole is 5 m, find the height of the tower.

SECTION - C

Q.11 From a solid cylinder whose height is 2.4 cm and diameter 1.4 cm, a conical cavity of the same height and same diameter is hollowed out. [04]
Find the total surface area of the remaining solid to the nearest cm^2 .

Q.12 Prove that the parallelogram circumscribing a circle is a rhombus. [04]

OR



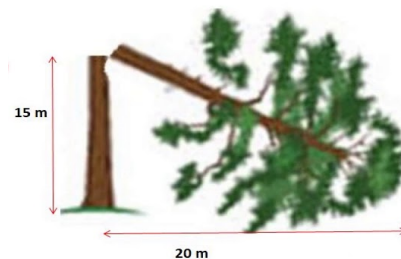
In figure, PQ is a chord of length 8 cm of a circle of radius 5 cm. The tangents at P and Q intersect at a point T. Find length of TP.

Q.13

Case Study - 1

Monika is having a garden near her house. In the garden there are different types of trees and flower plants. She waters all those plants regularly and take care of the garden. One day due to heavy rain and storm one of tree got broken as shown in the figure

The height of unbroken part is 15 m and the broken part of the tree has fallen at 20 m away from base of the tree.



Now answer the following questions.

(i) What is the area of the formed right-angled triangle? [02]

(ii) What is the perimeter of the formed triangle? [02]

Q.14

Case Study - 2

India is a competitive manufacturing location due to the low cost of manpower and strong technical and engineering capabilities contributing to higher quality productions runs.

The production of TV sets in a factory increases uniformly by fixed numbers every year. It produced 16000 sets in 6th year and 22600 in 9th year.



Answer the following questions.

(i) Find the production during first year

[02]

(ii) Find the production during first 3 years.

[02]