

SET 1

INDIAN SCHOOL SOHAR
FORMATIVE ASSESSMENT IV (2015 – 16)
MATHEMATICS

No of printed pages: 2

Class: IX

Date: 04.02.2016

Marks: 20

Time: 40 minutes

General Instructions:

- All questions are compulsory.
 - **Section A** comprises 3 questions of 1 mark each, **Section B** comprises 2 questions of 2 marks each, **Section C** comprises 3 questions of 3 marks each and **Section D** comprises 1 question of 4 marks.
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SECTION A

1. Find the number of small cubes with edge 20 cm that can be accommodated in a cubical box of 2 m edge.
2. Calculate the volume of a sphere with radius 2r.
3. Two parallelograms are on the same base and between the same parallels. Find the ratio of their areas.

SECTION B

4. Diagonals AC and BD of a trapezium ABCD with $AB \parallel DC$ intersect each other at O. Prove that $\text{ar}(\triangle AOD) = \text{ar}(\triangle BOC)$
5. The height of a cone is 15 cm. If its volume is $125\pi \text{ cm}^3$, find the diameter of the base.

P.T.O

SET 2

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SECTION A

1. Calculate the volume of hemisphere with radius 2r.
2. Find the number of small cubes with edge 10 cm that can be accommodated in a cubical box of 1m edge.
3. Two triangles are on the same base and between the same parallels. Find the ratio of their areas.

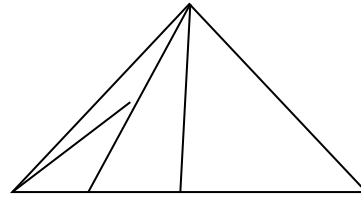
SECTION B

4. If slant height of a cone is 21 m and diameter of its base is 14 m, then find its total surface area.
5. Diagonals PR and QS of a trapezium PQRS with $PQ \parallel RS$ intersect each other at O. Prove that $\text{ar}(\triangle POS) = \text{ar}(\triangle QOR)$.

P.T.O

SECTION C

6. D is the midpoint of side BC of ΔABC and E is the midpoint of BD. If O is the midpoint of AE, then prove that $\text{ar}(\Delta BOE) = \frac{1}{8} \text{ar}(\Delta ABC)$.



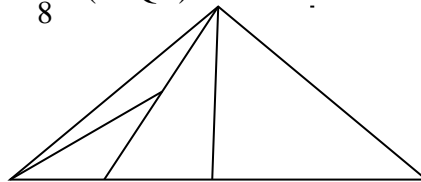
7. If the diagonals of a cyclic quadrilateral are diameters of the circle through the vertices of the quadrilateral, prove that it is a rectangle.
8. The total surface area of a solid cylinder is 231 cm^2 and its curved surface area is $\frac{2}{3}$ of the total surface area. Find the volume of the cylinder.

SECTION D

9. In a circle of radius 5 cm, AB and AC are two chords such that $AB = AC = 6 \text{ cm}$. Find the length of the chord BC.

SECTION C

6. S is the midpoint of side QR of ΔPQR and T is the midpoint of QS. If O is the midpoint of PT, then prove that $\text{ar}(\Delta QOT) = \frac{1}{8} \text{ar}(\Delta PQR)$.



7. The total surface area of a solid cylinder is 231 cm^2 and its curved surface area is $\frac{2}{3}$ of the total surface area. Find the volume of the cylinder.
8. If circles are drawn taking two sides of a triangle as diameters, prove that the point of intersection of these circles lie on the third side.

SECTION D

9. In a circle of radius 5 cm, MN and MP are two chords such that $MN = MP = 6 \text{ cm}$. Find the length of the chord PN.