DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2024-25
MONDAY TEST

CLASS: IX **FULLMARKS: 40**
SUBJECT: MATHEMATICS **DATE: 25/11/24**

General Instructions:

- **The paper consists of three printed pages.**
- **All questions are compulsory.**
- **Copy the question number carefully before answering the questions.**

SECTION: A

1. **[1×8 = 8]**

i) The total surface area of a cuboid is 1372 square cm. If its dimensions are in the ratio 4 : 2 : 1, then the length is:

a) 7 cm **b) 14 cm** **c) 21 cm** **d) 28 cm**

ii) If in a quadrilateral both pairs of opposite angles are equal, then it is always a:

a) trapezium **b) kite** **c) square** **d) parallelogram**

iii) In a right triangle, two sides are equal. The longest side is $7\sqrt{2}$ cm, the remaining sides are:

a) 6 cm each **b) $6\sqrt{2}$ cm each** **c) 7 cm each** **d) $7\sqrt{2}$ cm each**

iv) If the height of a cuboid is tripled, then the ratio of the volume of the new to the original will be:

a) 4 : 1 **b) 3 : 1** **c) 1 : 2** **d) 2 : 3**

v) Area of an equilateral triangle is $9\sqrt{3}$ cm^2, then length of its each side is:

a) 6 cm **b) 10 cm** **c) 8 cm** **d) 16 cm**

vi) The difference between the total surface area and lateral surface area of a cube of side 6 cm will be:

a) 12 cm^2 **b) 140 cm^2** **c) 36 cm^2** **d) 72 cm^2**

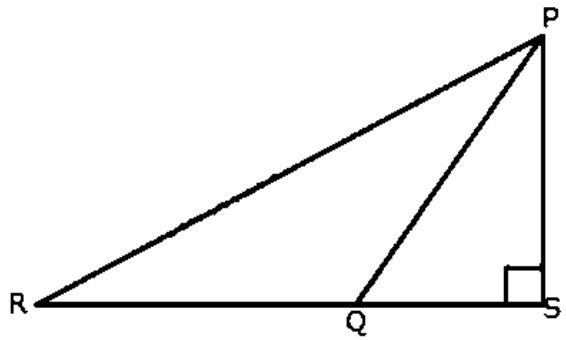
vii) Three angles of a quadrilateral are 57°, 109° and 114°, then the fourth angle is equal to:

a) 102° **b) 100°** **c) 90°** **d) 80°**

viii) Assertion (A) : The angles of a quadrilateral are in ratio 3 : 4 : 5 : 6, thus form a trapezium.
Reason (R) : Angles are different and two pairs of adjacent angles are supplementary.
a) Both (A) and (R) are true, and R is the correct reason for A.
b) Both (A) and (R) are true, and R is the incorrect reason for A.
c) (A) is true but (R) is false.
d) (A) is false but (R) is true.

SECTION: B

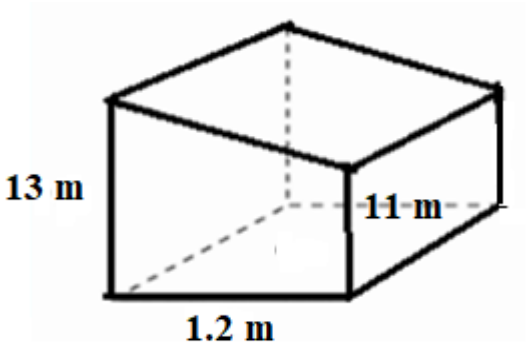
2. In the given figure ∠ PSQ = 90°, PQ = 10 cm. QS = 6 cm and RQ = 9 cm. Find the length of PR. [3]



3. A cuboidal oil container is 30 cm × 40 cm × 50 cm and is made up of tin sheet. Find the cost of painting outer surface of 20 such containers if the rate of cost of painting is ₹ 20/m^2. [4]

4. ABCD is a parallelogram, the bisectors of ∠ADC and ∠BCD meet at E and bisectors of ∠ABC and ∠ BCD meet at F. Prove that DE parallel to BF. [4]

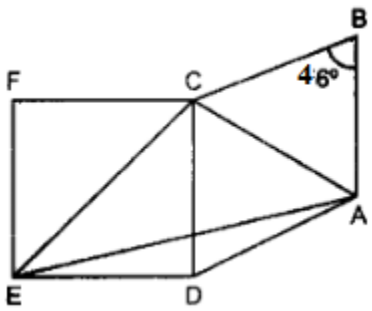
5. A water tank is 60 m long and 1.2 m wide. Its shallow and deep ends are 11 m and 13 m deep respectively. If the top of the tank slopes uniformly, find the amount of water in litres required to fill the tank. [4]



6. A rectangular plot 75 m long and 60 m wide is to be covered with grass leaving 5 m all around, find the area covered with grass and also the area left. [4]

7. A square shaped frame is made from wire. The diagonal of the square is 15 m. Calculate the total length of wire needed to make the frame. (corrected up to one decimal place) [4]

8. In the given figure, ABCD is a rhombus and DCFE is a square, also given ∠ ABC = 46°. Find ∠ DAE, ∠FEA, ∠EAC, ∠AEC. [4]



9. Two adjacent sides of a parallelogram are 13 cm and 14 cm. If one diagonal of it is 15 cm long, find the area of the parallelogram. Also find the shortest distance between the shorter sides. (corrected up to one decimal place) [5]