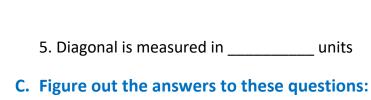
Diagonal of Cuboid and Cube

A. Choose the correct answer:

- 1. The formula for the diagonal of a cuboid with length I, breadth b, and height h is:
 - a) $\sqrt{(1 + b + h)}$
 - b) $\sqrt{(l^2 + b^2 + h^2)}$
 - c) $\sqrt{(2l^2 + 2b^2 + 2h^2)}$
 - d) $\sqrt{(lb + bh + hl)}$
- 2. The formula for the diagonal of a cube with side a is:
 - a) √2 × a
 - b) $\sqrt{3} \times a$
 - c) √5 × a
 - d) $2 \times a$
- 3. If the length, breadth, and height of a cuboid are all equal, the cuboid becomes a:
 - a) Square
 - b) Cone
 - c) Cube
 - d) Cylinder
- 4. A cube has side 7 cm. Its diagonal is:
 - a) 7v3 cm
 - b) 7√2 cm
 - c) 14√3 cm
 - d) 7√5 cm
- 5. In a cuboid, the longest distance between any two vertices is the:
 - a) Edge
 - b) Height
 - c) Diagonal
 - d) Face
- **B.** Write the Missing Terms to Complete the Sentences:
 - 1. Diagonal of a cuboid = √(_____)
 - 2. Diagonal of a cube = _____ × side
 - 3. In a cube, all the edges are of _____ length
 - 4. The diagonal of a cuboid joins _____ opposite vertices



- - 1. Find the diagonal of a cuboid with length 6 cm, breadth 8 cm, and height 10 cm.
 - 2. Find the diagonal of a cube with side 9 cm.
 - 3. Calculate the diagonal of a cuboid having length 3 m, breadth 4 m, and height 5 m.
 - 4. A cuboid has dimensions 12 cm, 5 cm, and 9 cm Find its diagonal.
 - 5. Find the diagonal of a cube whose side is 5 cm.

D. Mark each sentence with a True (\checkmark) or False (X):

- 1. Diagonal of a cube is given by $\sqrt{2}$ × side.
- 2. In a cuboid, the diagonal is the longest straight line inside it.
- 3. Diagonal of a cuboid depends only on the length and breadth.
- 4. All diagonals of a cube are equal. _____
- 5. A cuboid with length = breadth = height is a cube.

E. Challenge yourself with these questions:

- 1. Find the diagonal of a cuboid with dimensions 10 cm, 24 cm, and 26 cm.
- 2. Find the length of the side of a cube whose diagonal is $12\sqrt{3}$ cm.
- 3. Calculate the diagonal of a cuboid with length 15 cm, breadth 8 cm, and height 17 cm.
- 4. Find the diagonal of a cube with side 6 cm.
- 5. A cuboid has length 7 cm, breadth 24 cm, and height 25 cm Find its diagonal.