



ST. LAWRENCE HIGH SCHOOL
A JESUIT CHRISTIAN MINORITY INSTITUTION



Sub: Arithmetic

Class: 7

Date: 22.06.20

Duration: 40 min

Worksheet Solution 37

Full Marks: 15

VOLUME AND SURFACE AREA OF SOLIDS

Choose the Correct options:

- 1) Dean has a cardboard box whose length, breadth and height are in the ratio 1:2:3. He makes a new box such that the length, breadth and height got increased by 100%, 200% and 200% respectively. How much less is volume of old box than the new box?
 - a. 12 times less
 - b. 16 times less
 - c. **17 times less**
 - d. 24 times less

- 2) Ramesh has a metal cube. He paints all sides of the cube with green color. He divides the cube into smaller cubes of volume 1 cu.m. each. How many of these smaller cubes will not have green color on even one of its sides if the volume of larger cube is 27 cu.m.?
 - a. 9
 - b. **1**
 - c. 0
 - d. 3

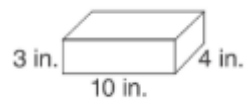
- 3) Paper charge is Rs. 60 per kg. How much expenditure would be there to cover a cube of edge 10m with a paper, if one kg of paper covers 20 sq.m. area?
 - a. Rs. 2250
 - b. Rs. 3600
 - c. Rs. 2700
 - d. **Rs. 1800**

- 4) Ramesh has a rectangular wooden block. P, Q and R are the areas of the three adjacent and contiguous faces of the block. If we denote its volume by S, then which of the following is true for sure?
 - a. $S = 2(P+Q+R)$
 - b. $S = P+Q+R$
 - c. **$S^2 = PQR$**
 - d. $S^2 = (PQR)/2$

- 5) A steel vessel has a base of length 60 cm and breadth 30 cm. Water is poured in the vessel. A cubical steel box having edge of 30 cm is immersed completely in the vessel. How much will the water rise?
 - a. 7.5 cm rise
 - b. 10 cm rise
 - c. **15 cm rise**
 - d. 30 cm rise

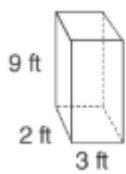
- 6) If the areas of the three adjacent faces of a cuboidal box are 120cm^2 , 72cm^2 and 60cm^2 respectively, find the volume of the box.
- 7200 cm^3
 - 720 cm^3**
 - 864 cm^3
 - $(72)^2\text{ cm}^3$
- 7) A room is 6m long, 5m broad and 4m high. The maximum length of rod that can be kept in the room is
- $\sqrt{61}\text{m}$
 - $\sqrt{16}\text{m}$
 - $\sqrt{36}\text{m}$
 - $\sqrt{77}\text{m}$**
- 8) Ramesh's bedroom has a rectangular floor. He built the 4 walls of this room in Rs. 24000 at the rate of Rs. 20 per sq. m. What is height of his bedroom if perimeter of the floor is 150m?
- 5 m
 - 8 m**
 - 15 m
 - 16 m
- 9) On decreasing each side of cube by 21%, its surface area decreases by?
- 38.47%
 - 37.59%**
 - 38.95%
 - 33.33%
- 10) A rectangular wall has its length, breadth and height in the ratio 6:5:3. What is its breadth if entire surface area is 504 sq.m ?
- $5\sqrt{3}\text{ sq.m}$
 - $2\sqrt{3}\text{ sq.m}$
 - 22 sq.m
 - $10\sqrt{2}\text{ sq.m}$**
- 11) A 4080 cu.cm cubical room can contain how many maximum number of boxes having dimensions 4 cm, 3 cm and 2 cm?
- 170**
 - 185
 - 160
 - 155
- 12) What will be maximum possible length of a pole in a room with dimensions 10 cm x 12 cm x 8 cm?
- 10 cm
 - $14\sqrt{11}\text{cm}$
 - $2\sqrt{77}\text{cm}$**
 - 12 cm

13. What is the surface area?



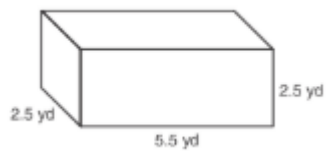
- a. **164 in²**
- b. 82 in²
- c. 120 in³
- d. 164 in³

14. What is the volume?



- a. 14 ft²
- b. **54 ft²**
- c. 54 ft³
- d. 102 ft³

15. What is the volume to the nearest tenth?



- a. 34.4 yd²
- b. 34.38 yd³
- c. **34.4 yd³**
- d. 34.38 yd²