



# VIDYA BHARATI SCHOOL

OLYMPIAD WORKSHEET: JANUARY- 2018

GRADE: IX

SUBJECT: MATHEMATICS

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**Write the correct answer in each of the following:**

- The length breadth and height of a cuboid are 15 cm, 12 cm and 4.5 cm respectively. Its volume is  
a)  $243 \text{ cm}^3$     b)  $405 \text{ cm}^3$     c)  $810 \text{ cm}^3$     d)  $603 \text{ cm}^3$
- A cuboid is 12 cm long, 9 cm broad and 8 cm high. Its total surface area is  
a)  $864 \text{ cm}^2$     b)  $552 \text{ cm}^2$     c)  $432 \text{ cm}^2$     d)  $276 \text{ cm}^2$
- The length of the longest rod that can be placed in a room of dimensions (10m $\times$ 10m $\times$ 5m) is  
a) 15 m    b) 16 m    c)  $10\sqrt{5}$     d) 12 m
- A river 1.5 m deep and 30 m wide is flowing at the rate of 3 km per hour. The volume of water that runs into the sea per minute is  
a)  $2000 \text{ m}^3$     b)  $2250 \text{ m}^3$     c)  $2500 \text{ m}^3$     d)  $2750 \text{ m}^3$
- The lateral surface area of a cube is  $256 \text{ m}^2$ . The volume of the cube is  
a)  $64 \text{ cm}^3$     b)  $216 \text{ cm}^3$     c)  $256 \text{ m}^3$     d)  $512 \text{ m}^3$
- The total surface area of a cube is  $96 \text{ cm}^2$ . The volume of the cube is  
a)  $8 \text{ cm}^3$     b)  $27 \text{ cm}^3$     c)  $64 \text{ cm}^3$     d)  $512 \text{ cm}^3$
- The volume of a cube is  $512 \text{ cm}^3$ . Its total surface area is  
a)  $256 \text{ cm}^2$     b)  $384 \text{ cm}^2$     c)  $512 \text{ cm}^2$     d)  $64 \text{ cm}^2$
- The length of the longest rod that can fit in a cubical vessel of side 10 cm, is  
a) 10 cm    b) 20 cm    c)  $10\sqrt{2}$  cm    d)  $10\sqrt{3}$  cm
- If the length of diagonal of a cube is  $8\sqrt{3}$  cm, then its surface area is  
a)  $192 \text{ cm}^2$     b)  $384 \text{ cm}^2$     c)  $512 \text{ cm}^2$     d)  $768 \text{ cm}^2$
- If each edge of a cube is increased by 50% , then the percentage increase in its surface area is  
a) 50%    b) 75%    c) 100%    d) 125%
- In a shower, 5 cm of rain falls. What is the volume of water that falls on 2 hectares of ground?  
a)  $500 \text{ m}^3$     b)  $750 \text{ m}^3$     c)  $800 \text{ m}^3$     d)  $1000 \text{ m}^3$
- Two cubes have their volumes in the ratio 1:27. The ratio of their surface area is

- a) 1:3      b) 1:8      c) 1:9      d) 1:18

13. If each side of a cube is doubled, then its volume

- a) Is doubled    b) becomes 4 times    c) becomes 6 times    d) becomes 8 times

14. If the diameter of a cylinder is 28 cm and its height is 20 cm, then its curved surface area is

- a)  $880 \text{ cm}^2$     b)  $1760 \text{ cm}^2$       c)  $3520 \text{ cm}^2$     d)  $2640 \text{ cm}^2$

15. The height of a cylinder is 14 cm and its curved surface area is  $264 \text{ cm}^2$ . The volume of the cylinder is

- a)  $308 \text{ cm}^3$     b)  $396 \text{ cm}^3$     c)  $1232 \text{ cm}^3$     d)  $1848 \text{ cm}^3$

16. The curved surface area of a cylindrical pillar is  $264 \text{ m}^2$  and its volume is  $924 \text{ m}^3$ . The height of the pillar is

- a) 4 m      b) 5 m      c) 6 m      d) 7 m

17. Two circular cylinders of equal volume have their heights in the ratio 1:2. The ratio of their radii is

- a) 1:  $\sqrt{2}$       b)  $\sqrt{2}$ :1      c) 1:2      d) 1:4

18. In a cylinder, if the radius is halved and the height is doubled, then the volume will be

- a) The same    b) doubled    c) halved    d) four times

19. The radius of a wire is decreased to one-third. If volume remains the same, the length will become

- a) 2 times    b) 3 times    c) 6 times    d) 9 times

20. The lateral surface area of a cylinder is

- a)  $\pi r^2 h$       b)  $\pi r h$       c)  $2\pi r h$       d)  $2\pi r^2$

