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## MATHS

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## MATHS (ENGLISH)

## THREE DIMENSIONAL GEOMETRY

## Examples

1. The length , Width , and height of right prism are 9,4 and 2, respectively .what is the
length of the lonest segment whose endpoints are vertices of the prism?

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2. A sphere with diameter 10 meters is inscribed in a cube .What is the volume of the space between the sphere and the cube?

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3. A Cylinder has a volume of $500 \mathrm{in}^{3}$. What is
the radius of this cylinder if its altitude equals
the diameter of its base?

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4. IF the volume of a right circular cone is reduced by $15 \%$ by reducing its height by $5 \%$, by what percent must the radius of the be reduced?
5. The distance between two points in space
$A(2, y,-3)$ and $(1,-1,4)$ is 9 . Find the possible values of $y$.

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6. Describe the graph of the set of points
$(x, y, z) \quad$ where
$(x-6)^{2}+(y+3)^{2}+(z-2)^{2}=36$
7. Describe the graph of the set of points $(x, y, z)$ where $x^{2}+z^{2}=1$.

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8. If the segment of the line $y=-2 x+2$
that lies in quadrant $I$ is rotated about the $y$ -
axis, a cone is formed. What is the volume of
the cone?

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1. The figure below shows a right circular inscribed in a cube with edge of length $x$.

What is the ratio of the volume of the cylinder to the volume of the cube?
A. $\frac{2}{3}$
B. $\frac{3}{4}$
C. $\frac{\pi}{4}$
D. $\frac{\pi}{2}$

## Answer: C

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2. The volume of right circular cylinder is the same numerical as its total surface area .Find the smallest integral value for the radius of the cylinder .
A. 1
B. 2
C. 3
D. 4

## Answer: C

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3. The length , Width, and height of a rectangular solid are $5 \mathrm{~cm}, 3 \mathrm{~cm}$ and 7 cm respectively. What is the length of the longest segment whose endpoints are vertices of the rectangular solid?
A. 5.8 cm

## B. 7.6 cm

## C. 8.6 cm

D. 9.1

## Answer: D

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4. The distance between two points in space,
,$P(x,-1,-1)$ and $Q(3,-3,1)$, is 3 .find
the possible values of $x$.
A. 1 or 2
B. 2 or 3
C. -2 or 3
D. 2 or 4

Answer: D

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5. The point ${ }^{`}(-4,0,7)$ lies on the
A. $y$ - axis
B. xy plane
C. yz plane
D. xz plane

## Answer: D

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6. The region in the first quadrant bounded by
the line $3 x+2 y=7$ and the coordinate axes
is rotated about the $x$-axis. What is the volume of the resulting solid?
A. 8 units $^{3}$

B. 20 units $^{3}$

C. 30 units $^{3}$
D. 40 units $^{3}$

Answer: C

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