



MATHS

BOOKS - PATHFINDER MATHS (BENGALI ENGLISH)

3D-GEOMETRY

Question Bank

1. The point $(-2, -8, 5)$ lies in the octant

A. OXYZ

B. OX'Y'Z

C. OX'YZ

D. OXYZ'

Answer: B



Watch Video Solution

2. The equation of zx plane is

A. $y=0$

B. $z=0$

C. $x=0, z=0$

D. $x=0$

Answer: A



Watch Video Solution

3. The distance between the points $(3,2,1)$ &

$(4,-1,3)$ is

A. $\sqrt{15}$

B. $\sqrt{10}$

C. $\sqrt{14}$

D. None of these

Answer: C



Watch Video Solution

4. The distance of (6,-5,1) from the origin is

A. $\sqrt{62}$

B. 62

C. 12

D. None of these

Answer: A



Watch Video Solution

5. The coordinate of the mid-point of the line segment joining the points $(4,5,3)$ & $(-2,1,-1)$ is

A. $(2,2,2)$

B. $(1,3,1)$

C. (2,3,2)

D. None of these

Answer: B



Watch Video Solution

6. The centroid of the triangle with vertices

$(-1,1,1)$, $(-1,4,1)$, $(-1,-2,1)$ is

A. (0,0,0)

B. (1,2,1)

C. $(-1,1,1)$

D. $(-1,1,1)$

Answer: D



Watch Video Solution

7. The coordinate of the projection of the point $(2,1,3)$ on the x-axis is

A. $(0,1,3)$

B. $(2,1,0)$

C. (2,0,0)

D. None of these

Answer: C



Watch Video Solution

8. The equation of X axis is

A. $x=0, y=0$

B. $y=0, z=0$

C. $z=0, x=0$

D. $z=1, x=0$

Answer: B



Watch Video Solution

9. The coordinate of the projection of the point $(-3,0,6)$ on zx plane is

A. $(-3,0,0)$

B. $(0,0,6)$

C. $(-3,0,6)$

D. None of these

Answer: C



Watch Video Solution

10. The ratio in which yz plane the line segment formed by joining the points $(-2,4,7)$ & $(3,-5,8)$ is

A. 3 : 2

B. 2 : 3

C. 2: 1

D. 3: 3

Answer: B



Watch Video Solution

11. In 3- dimensional space $y^2 = z^2 = 0$ is the equation of

A. equation of x-axis

B. equation of y-axis

C. equation of z-axis

D. equation of yz-axis

Answer: A



Watch Video Solution

12. If the points $O(0,0)$, $A(\cos \alpha, \sin \alpha)$, $B(\cos \beta, \sin \beta)$ are the vertices of a right-angled triangle, then

$$\left| \sin \frac{(\alpha - \beta)}{2} \right| =$$

A. $\frac{1}{2}$

B. $\frac{1}{\sqrt{2}}$

C. $\frac{1}{\sqrt{3}}$

D. None of these

Answer: B



Watch Video Solution

13. Q, R, S are the points on the line joining the point P(a,x) and T(b,y) such that PQ=QR=RS=ST,

then $\left(\frac{5a + 3b}{8}, \frac{5x + 3y}{8}\right)$ is the midpoint
of the segment

A. PQ

B. QR

C. RS

D. ST

Answer: B



Watch Video Solution

14. Find the locus of the point which is equidistant from the points $A(0,2,3)$ & $B(2,-2,1)$



Watch Video Solution

15. Find the coordinates of the point on y-axis, which is at a distance of $5\sqrt{2}$ from the point $(3,2,-5)$



Watch Video Solution

16. Find the coordinates of the point which divides the join of the points. P (5,4,2) & Q(-1,-2,4) in the ratio 2:3



Watch Video Solution

17. Given that P (3,2,-4), Q (5,4,-6) & R (9,8,-10) are collinear. Find the ratio in which Q divides PR



Watch Video Solution

18. Find the locus of a point P which moves in such a way that $2PA=3PB$ when A (1,-2,3) & B(2,1,4) are given points



Watch Video Solution

19. Find the locus of a moving point whose distance from the y-axis is always 3



Watch Video Solution

20. Find the locus of a moving point whose distance from the point $(1,-1,2)$ is always equal to the distance from x axis



Watch Video Solution

21. Find the ratio in which the line joining the pts $(-3,4,8)$ and $(5,-6,4)$ is divided by the xy plane



Watch Video Solution

22. Prove that the triangle formed by joining the three points whose co-ordinates are $(1,2,3)$ $(2,3,1)$ & $(3,1,2)$ respectively is an equilateral triangle.



Watch Video Solution

23. A,B,C are three points on the axes of x, y and z respectively at distance a, b,c from the origin O, find the co-ordinate of the point which is equidistant from A, B, C and O



Watch Video Solution

24. Find the locus of a point P such that

$$3\overline{PA}^2 = 2\overline{PB}^2 \text{ where } A(1,1,4) \text{ \& } B(2,1,3)$$



[Watch Video Solution](#)

25. Find the possible octants where the point

(x,y,z) may lie for $z-y=0$



[Watch Video Solution](#)

26. Find the octants which contain the point (x,y,z) satisfying $xy > 0$



Watch Video Solution

27. Give the interpretation of the following equation

$$x=0,y=0$$



Watch Video Solution

28. Give the interpretation of the following equation

$$y=0, z=0$$



Watch Video Solution

29. Give the interpretation of the following equation

$$x=a, z=c$$



Watch Video Solution

30. Prove that the points $(1,-3,1)$, $(0,1,2)$, $(2,-1,3)$ are the vertices of an isosceles right angled triangle



Watch Video Solution

31. The midpoints of the sides of a triangle are $(1,5,-1)$, $(0,4,-2)$ & $(2,3,4)$. Find its vertices



Watch Video Solution

32. If the origin is the centroid of the triangle PQR with vertices $P(2a, 2, 6)$, $Q(-4, 3b, -10)$ & $R(8, 14, 2c)$ then find the values of a , b & c



Watch Video Solution

33. Show that the points $(1, 1, 1)$, $(-2, 4, 1)$, $(-1, 5, 5)$ & $(2, 2, 5)$ form a square.



Watch Video Solution

34. Find the coordinates of the points which divide the segment joining the points A (2,7,1), B (8,-2,5) into three equal parts



Watch Video Solution

35. A & B are two pts (0,2,3) and (2,-2,1) respectively find the locus of a point P such that it is equidistant from the given points



Watch Video Solution

36. find the equation of the sphere passing through the four points $(0,0,0)$, $(1,0,0)$, $(0,1,0)$ and $(0,0,1)$



Watch Video Solution

37. Find the ratio in which the yz -plane divides the join of the points $(-2,4,7)$ and $(3,-5,8)$ and also find the co-ordinate of the point of intersection of this line with the yz -plane



Watch Video Solution

38. A and B are two points $(0,2,3)$ and $(2,-2,1)$ respectively. Find the locus of a point P such that the sum of the square of its distances from the two given points is constant, equal to $2k^2$



Watch Video Solution

39. Show that the plane $ax+by+ca+d=0$ divides the line joining the points

(x_1, y_1, z_1) & (x_2, y_2, z_2) in the ratio -

$$\frac{ax_1 + by_1 + cz_1 + d_1}{ax_2 + by_2 + cz_2 + d_2}$$



Watch Video Solution