



# MATHS

## BOOKS - TELUGU ACADEMY MATHS (TELUGU ENGLISH)

### THREE DIMENSIONAL CO-ORDINATES

#### 1 D Vsaq

1. The distance between the points  $(5, -1, 7)$  and  $(c, 5, 1)$  is 9 then  $c =$



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2. Show that the points  $(1,2,3)$ ,  $(2,3,1)$  and  $(3,1,2)$  form an equilateral triangle.



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3. Show that the point  $A(-4, 9, 6)$ ,  $B(-1,6,6)$ ,  $C(0,7,10)$  form a right angled isosceles triangle.



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4. Show that ABCD is a square where A,B,C,D are the points  $(0,4,1)$ ,  $(2,3,-1)$ ,  $(4,5,0)$  and  $(2,6,2)$  respectively.



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5. Find the distance between the mid point of the line segment  $\overline{AB}$  and the point  $(3,-1,2)$  where  $A = (6,3,-4)$ ,  $B = (-2,-1,2)$ .



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6. If  $M(\alpha, \beta, \gamma)$  is the mid point of the line segment joining the points  $A(x_1, y_1, z_1)$  and B then find B.



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7. If  $(x_1, y_1, z_1)$  and  $(x_2, y_2, z_2)$  are two vertices and  $(\alpha, \beta, \gamma)$  is the centroid of a triangle, find the third vertex of the triangle.



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8. Find the coordinates of the vertex 'C' of  $\Delta ABC$  if its centroid is the origin and the vertices A,B are (1,1,1) and (-2,4,1) respectively.



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9. If (3,2,-1), (4,1,1) and (6,2,5) are three vertices and (4,2,2) is the centroid of a tetrahedron, find the fourth vertex of that tetrahedron.



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**10.** Find the fourth vertex of the parallelogram whose consecutive vertices are  $(2, 4, -1)$ ,  $(3, 6, -1)$  and  $(4, 5, 1)$ .



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**11.** Find the ratio in which YZ-plane divides the line joining  $A(2,4,5)$  and  $B(3,5,-4)$ . Also find the point of intersection.



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12. Show that the points  $(5,4,2)$ ,  $(6,2,-1)$  and  $(8,-2,-7)$  are collinear.



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13. Show that the points  $A(3, 2, -4)$ ,  $B(5, 4, -6)$  and  $C(9, 8, -10)$  are collinear and find the ratio in which B divides  $\overline{AC}$ .



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**14.** If  $H$ ,  $G$ ,  $S$  and  $I$  respectively denote orthocentre, centroid, circumcentre and incentre of a triangle formed by the points  $(1, 2, 3)$ ,  $(2, 3, 1)$  and  $(3, 1, 2)$ , then find  $H, G, S, I$



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**15.** Find the incentre of the triangle formed by the points  $(0, 0, 0)$ ,  $(3, 0, 0)$  and  $(0, 4, 0)$ .



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**16.** Find the centroid of the tetrahedron whose vertices are  $(2,3,-4)$   $(-3,3,-2)$ ,  $(-1,4,2)$ ,  $(3,5,1)$



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Spq

**1.** Find the ratio in which the XZ-plane divides line joining  $A(-2,3,4)$  and  $B(1,2,3)$



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2. Show that the points  $(5,4,2)$ ,  $(6,2,-1)$  and  $(8,-2,-7)$  are collinear.



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3. Show that the points  $A(3, -2, 4)$ ,  $B(1, 1, 1)$ ,  $C(-1, 4, -2)$  are collinear.



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