

INTRODUCTION TO THREE DIMENSIONAL GEOMETRY

CM111101

1. Prove that the triangle formed by joining the three points whose coordinates are $(1,2,3)$, $(2,3,1)$ and $(3,1,2)$ is an equilateral triangle.
2. Show that the point $(0,7,10)$, $(-1,6,6)$ and $(-4,9,6)$ are the vertex of the isosceles right angled triangle .
3. Show that the points of $A(1,3,0)$, $B(0,6,3)$, $C(1,7,7)$ and $D(4,4,7)$ are the vertex of square.
4. Find the equation if the set of the point P such that its distance from the points $A(3,4,-5)$ and $B(-2,1,4)$ are equal.
5. Find the coordinates of the points which divides the join of $P(2,-1,4)$ and $Q(4,3,2)$ in the ratio 2:3
(i) internally (ii) externally.
6. Find the ratio in which the join the $A(2,1,5)$ and $B(3,4,3)$ is divides by the planes $2x + 2y - 2z = 1$.
also, find the coordinates of the points of division.
7. Using section formula ,prove that the three points $A(-2,3,5)$, $B(1,2,3)$ and $C(7,0,-1)$ are collinear.
8. The mid points of the divides sides of a triangle $(1,5,-1)$, $(0,4,-2)$ and $(2,3,4)$. find the its vertex.
9. Given that $P(3,2,-4)$, $Q(5,4,-6)$ and $C(9,8,-10)$ are collinear . find the ration in which Q divides PR.
10. Find the coordinates of the points which trisect the line segment AB ,given that $A(2,1,-3)$ and $B(5,-8,3)$.
11. Find the cenroid of a triangle ,mid-point of whose sides are $(1,2,-3)$, $(3,0,1)$ and $(-1,1,4)$.
12. The centriod of the triangle ABC is at points $(1,1,1)$ if the coordinates of A and B are $(3,-5,7)$ and $(-1,7,-6)$, find the coordinates of the point C.
13. Find the coordinates of the point which trisect the line segment joining the points $P(4,2,-6)$ & $Q(10,-16,6)$.
14. Using section formula , show that the points $A(2,-3,4)$, $B(-1,2,1)$ and $C(0,1/3,2)$ are collinear.
15. Given that $P(3,2,-4)$, $Q(5,4,-6)$ and $R(9,8,-10)$ are collinear. find the ratio of which Q divides PR.
16. Find the ratio in which the line segment joining the points $(4,8,10)$ and $(6,10,-8)$ is divided by the yz-planes.

