

National Institute of Open Schooling
Senior Secondary Course : Mathematics
Lesson 33 : Introduction to Three Dimensional Geometry
Worksheet - 33

1. Locate any three points in three dimensional geometry and name the octant where these points lie.
2. Take any two points on the octant $OXYZ$ and $OX'Y'Z$ and find the distance between two points and show it graphically.
3. Find the coordinates of the point which divides the line segment joining the points $(-3,3,2)$ and $(-1,5,2)$ externally in the ratio $2 : 3$
4. Verify the following points in the space to form a triangle or not to form the triangle:
 - i. $X(-2,4,2)$ $Y(2,-3,7)$ and $Z(-3,3,2)$
 - ii. $P(-1,4,-2)$ $Q(-3,-5,2)$ and $R(-1,11,2)$
5. Show that the triangle formed by the points (x, y, z) , (y, z, x) and (z, x, y) is an equilateral triangle.
6. Take any three points with their coordinates in the space such that these three points are collinear to each other.
7. Find the midpoint of the line segment joining the points $(-3,1,-2)$ and $(-3,-1,2)$
8. Show that the points $A(0, 4, 1)$, $B(2, 3, -1)$ and $C(4, 5, 0)$ form a right angled triangle.
9. Find the ratio in which the line segment joining the points $A(2, 4, 5)$ and $B(3, 5, -4)$ is divided by YZ -plane.
10. In the parallelogram $PQRS$ the three vertices $P(3, -4, 7)$, $Q(5, 3, -2)$ and $R(1, 2, -3)$. Find the fourth vertex of S of the parallelogram.