

NCERT Solutions for Class-XI Maths

Chapter-12 Exercise-12.1 NCERT Math Class 11

1. A point is on the x -axis. What are its y -coordinates and z -coordinates?
 1. If a point is on the x -axis, then its y -coordinates and z -coordinates are zero.
2. A point is in the XZ -plane. What can you say about its y -coordinate?
 2. If a point is in XZ plane, then its y -coordinate is 0.
3. Name the octants in which the following points lie:
 $(1, 2, 3), (4, -2, 3), (4, -2, -5), (4, 2, -5), (-4, 2, -5), (-4, 2, 5), (-3, -1, 6), (2, -4, -7)$
 3. The x -coordinate, y -coordinate, and z -coordinate of point $(1, 2, 3)$ are all positive. Therefore, this point lies in octant **I**.
The x -coordinate, y -coordinate, and z -coordinate of point $(4, -2, 3)$ are positive, negative, and positive respectively. Therefore, this point lies in octant **IV**.
The x -coordinate, y -coordinate, and z -coordinate of point $(4, -2, -5)$ are positive, negative, and negative respectively. Therefore, this point lies in octant **VIII**.
The x -coordinate, y -coordinate, and z -coordinate of point $(4, 2, -5)$ are positive, positive, and negative respectively. Therefore, this point lies in octant **V**.
The x -coordinate, y -coordinate, and z -coordinate of point $(-4, 2, -5)$ are negative, positive, and negative respectively. Therefore, this point lies in octant **VI**.
The x -coordinate, y -coordinate, and z -coordinate of point $(-4, 2, 5)$ are negative, positive, and positive respectively. Therefore, this point lies in octant **II**.
The x -coordinate, y -coordinate, and z -coordinate of point $(-3, -1, 6)$ are negative, negative, and positive respectively. Therefore, this point lies in octant **III**.
The x -coordinate, y -coordinate, and z -coordinate of point $(2, -4, -7)$ are positive, negative, and negative respectively. Therefore, this point lies in octant **VIII**.
4. Fill in the blanks:
 - (i) The x -axis and y -axis taken together determine a plane known as
 - (ii) The coordinates of points in the XY -plane are of the form
 - (iii) Coordinate planes divide the space into octants.

4. (i) The x -axis and y -axis taken together determine a plane known as xy -plane.
(ii) The coordinates of points in the XY -plane are of the form $(x, y, 0)$.
(iii) Coordinate planes divide the space into eight octants.



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