

RD Sharma
Solutions
Class 11 Maths
Chapter 28
Ex 28.1

Introduction to 3D Coordinate Geometry Ex 28.1 Q1(i)

All are positive, so octant is $XOYZ$

Introduction to 3D Coordinate Geometry Ex 28.1 Q1(ii)

X is negative and rest are positive, so octant is $X'OYZ$

Introduction to 3D Coordinate Geometry Ex 28.1 Q1(iii)

Y is negative and rest are positive, so octant is $XOY'Z$

Introduction to 3D Coordinate Geometry Ex 28.1 Q1(iv)

Z is negative and rest are positive, so octant is $XOYZ'$

Introduction to 3D Coordinate Geometry Ex 28.1 Q1(v)

X and Y are negative and Z is positive, so octant is $X'OY'Z$

Introduction to 3D Coordinate Geometry Ex 28.1 Q1(vi)

All are negative, so octant is $X'OY'Z'$

Introduction to 3D Coordinate Geometry Ex 28.1 Q1(vii)

Y and Z are negative, so octant is $XOY'Z'$

Introduction to 3D Coordinate Geometry Ex 28.1 Q1(viii)

X and Z are negative, so octant is $X'OYZ'$

Introduction to 3D Coordinate Geometry Ex 28.1 Q2(i)

YZ plane is x-axis, so sign of x will be changed. So answer is (2, 3, 4)

Introduction to 3D Coordinate Geometry Ex 28.1 Q2(ii)

XZ plane is y-axis, so sign of y will be changed. So answer is (-5, -4, -3)

Introduction to 3D Coordinate Geometry Ex 28.1 Q2(iii)

XY-plane is z-axis, so sign of Z will change. So answer is (5, 2, 7)

Introduction to 3D Coordinate Geometry Ex 28.1 Q2(iv)

XZ plane is y-axis, so sign of Y will change, So answer is (-5, 0, 3)

Introduction to 3D Coordinate Geometry Ex 28.1 Q2(v)

XY plane is Z-axis, so sign of Z will change So answer is (-4, 0, 0)

Introduction to 3D Coordinate Geometry Ex 28.1 Q3

Vertices of cube are

(1, 0, -1) (1, 0, 4) (1, -5, -1)

(1, -5, 4) (-4, 0, -1) (-4, -5, -4)

(-4, -5, -1) (4, 0, 4) (1, 0, 4)

Introduction to 3D Coordinate Geometry Ex 28.1 Q4

$3 - (-2) = 5$, $|0 - 5| = 5$, $|-1 - 4| = 5$

5, 5, 5 are lengths of edges

Introduction to 3D Coordinate Geometry Ex 28.1 Q5

$5 - 3 = 2$, $0 - (-2) = 2$, $5 - 2 = 3$

2, 2, 3 are lengths of edges

Introduction to 3D Coordinate Geometry Ex 28.1 Q6

(-4, 3, 5)

x-axis: $\sqrt{9+25} = \sqrt{34}$

y-axis: $\sqrt{16+25} = \sqrt{41}$

z-axis: $\sqrt{9+16} = 5$

Introduction to 3D Coordinate Geometry Ex 28.1 Q7

(-3, -2, -5) (-3, -2, 5) (3, -2, -5) (-3, 2, -5) (3, 2, 5)

(3, 2, -5) (-3, 2, 5)