IMAGE OF A POINT IN A PLANE

SUBJECT : MATHEMATICS
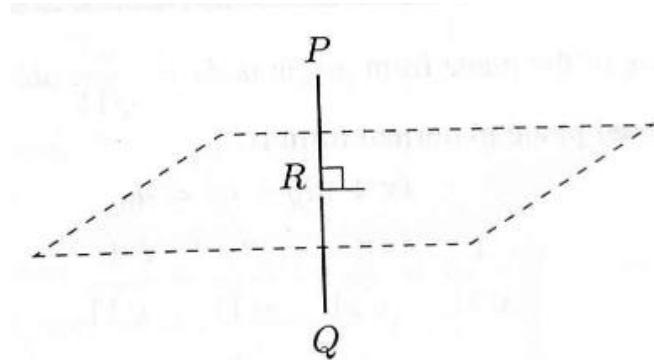**CHAPTER NUMBER:11**
CHAPTER NAME :THREE DIMENTIONAL GEOMETRY

Image of a point in a plane

Let us define the image of a point in a plane. Given a plane and a point P not lying in the

plane. Then a point Q is said to be image of P in the given plane, If PQ is perpendicular to

the given plane and the mid point R of PQ lies on the given plane.

Find the coordinate of the foot of perpendicular and the perpendicular distance from

the point $P(4,3,2)$ to the plane $x + 2y + 3z = 2$. Also find the image of P in the plane.

Find the distance of the point $(1, -2, 3)$ from the plane $x - y + z = 5$ measured

parallel to the line whose direction cosines are proportional to $2, \ 3, \ -6$.

Find the distance of the point $(-2, 3, -4)$ from the line $\frac{x+2}{3} = \frac{2y+3}{4} = \frac{3z+4}{5}$ measured

parallel to the plane $4x + 12y - 3z + 1 = 0$

1. Find the coordinate of the foot of perpendicular drawn from the origin to the plane

   $2x - 3y + 4z - 6 = 0$.

2. Find the length and the foot of perpendicular drawn from the point $(1, \frac{3}{2}, 2)$ to the plane

   $2x - 2y + 4z + 5 = 0$.

3. Find the image of the point having position vector $\hat{i} + 3\hat{j} + 4\hat{k}$ in the plane

   $\vec{r}.\left(2\hat{i} - \hat{j} + \hat{k}\right)3 = 0$.

4. Find the image of the point $(1, 2, 3)$ in the plane $x + 2y + 4z - 38 = 0$.

5. Find the distance of the point $(2,3,4)$ from the plane $3x + 2y + 2z + 5 = 0$

   measured parallel to the line $\frac{x+3}{3} = \frac{y-2}{6} = \frac{z}{2}$.

THANKING YOU
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