

National Institute of Open Schooling
Senior Secondary Course : Mathematics
Lesson 36 : Straight Lines
Worksheet- 36

1. Find the vector equation of the line L, if the line passing through the point P(2, 4, 5) and parallel to the vector $3\hat{i} + 2\hat{j} - 6\hat{k}$
2. Find the vector equation of a line passing through the point (1,-3,2) and having direction ratios (1,-2,3).
3. The straight line passing through the two points P (1, -5, 3) and Q (3, -2, 7) . Find out the vector equation of the straight line passing through the points P and Q.
4. If the point A (1,-1,3) and B(3,λ,3) are equidistant from the plane $5x+2y-7z+9=0$, find the value of λ.
5. The equation of the line given by $2x - 3y + 5z = 7$ and $x - 2y + 4z = 12$. Convert these equations of the line into symmetric form and find its direction cosines.
6. Prove that the lines $\frac{x-5}{4} = \frac{y-7}{4} = \frac{z+3}{-5}$ and $\frac{x-8}{7} = \frac{y-4}{1} = \frac{z-5}{3}$ are coplanar. Also find the equation of the plane containing these lines.
7. Find the equation of the line passing through the point (2,-1,3) and perpendicular to the lines $\frac{x-1}{2} = \frac{y-1}{-2} = \frac{z+1}{1}$ and $\frac{x-2}{1} = \frac{y+1}{2} = \frac{z+3}{2}$
8. Find the distance of the point P(1,8,4) from the line $\vec{r} = (-\hat{y} + 3\hat{k}) + \lambda(5\hat{i} + 5\hat{y} + \hat{k})$
9. Take any two lines L1 and L2 with their coordinates. Find out the conditions of intersecting of these two lines L1 and L2. If the equation of one line be symmetric form and other line is in general form, then find out condition of two lines are coplanar.
10. Find out the angle between the plane $2x - 5y + 3z = 11$ and the line $\frac{x-1}{2} = \frac{y-3}{4} = \frac{z}{-1}$