LINEAR

1. Equation of line passing through origin and making $30°, 60°$ and $90°$ with x, y, z axes respectively is

   (a) $\frac{2x}{\sqrt{3}} = \frac{y}{2} = \frac{z}{0}$

   (b) $\frac{2x}{\sqrt{3}} = \frac{2y}{1} = \frac{z}{0}$

   (c) $2x = \frac{2y}{\sqrt{3}} = \frac{z}{1}$

   (d) $\frac{2x}{\sqrt{3}} = \frac{2y}{1} = \frac{z}{1}$

2. If the equation of a line is $x = ay + b, z = cy + d$,then find the direction ratios of the line and a point on the line.

3. (a) Find the equations of the diagonals of the parallelogram $PQRS$ whose vertices are$P(4, 2, -6), Q(5, -3, 1), R(12, 4, 5), S(11, 9, -2)$.Use these equations to find the point of intersection of diagonals.

   (b) A line l passes through point$(-1, 3, -2)$ and is perpendicular to both the lines $\frac{x}{1} = \frac{y}{2} = \frac{z}{3}$ and $\frac{x+2}{-3} = \frac{y-1}{2} = \frac{z+1}{5}$.Find the vector equation of the line l.Hence,obtain its distance from origin.