1. **Assertion (A) :** The vectors

   $\vec{a} = 6\hat{i} + 2\hat{j} - 8\hat{k}$

   $\vec{b} = 10\hat{i} - 2\hat{j} - 6\hat{k}$

   $\vec{c} = 4\hat{i} - 4\hat{j} + 2\hat{k}$

   represent the sides of a right angled triangle.

   Reason (R) : Three non-zero vectors of which none of two are collinear forms a triangle if their resultant is zero vector or sum of any two vectors is equal to the third.

2. Find the vector equation of the line passing through the point $(2, 3, -5)$ and making equal angles with the co-ordinate axes.

3. Find a vector of magnitude $4\,units$ perpendicular to each of the vectors $2\hat{i} - \hat{j} + \hat{k}$ and $\hat{i} + \hat{j} - \hat{k}$ and hence verify your answer.

4. (a) Find the co-ordinates of the perpendicular drawn from the point $(2, 3, -8)$ to the line $\frac{4-x}{2} = \frac{y}{6} = \frac{1-z}{3}$.
   Also, find the perpendicular distance of the given point from the line.

   (b) Find the shortest distance between the lines L_1 & L_2 given below:
   L_1 : The line passing through $(2, -1, 1)$ and parallel to $\frac{x}{1} = \frac{y}{1} = \frac{z}{3}$
   $L_2 : \vec{r} = \hat{i} + (2\mu + 1)\hat{j} - (\mu + 2)\hat{k}$.