# Centum Preparation 100 Days plan class 12 Maths

| Q.No. | DAY - 39 |
|---|---|
| 224 | **Example 6.13**<br>Find the volume of the parallelepiped whose coterminus edges are given, by the vectors $2\hat{i}-3\hat{j}+4\hat{k}, \hat{i}+2\hat{j}-\hat{k}$ and $3\hat{i}-\hat{j}+2\hat{k}$. |
| 225 | **Example 6.15**<br>If $2\hat{i}-\hat{j}+3\hat{k}, 3\hat{i}+2\hat{j}+\hat{k}, \hat{i}+m\hat{j}+4\hat{k}$ are coplanar, find the value of $m$ |
| 226 | **Example 6.16**<br>Show that the four points $(6,-7,0), (16,-19,-4), (0,3,-6), (2,-5,10)$ lie on a same plane. |
| 227 | **Example 6.17**<br>If the vectors $\vec{a},\vec{b},\vec{c}$ are coplanar, then prove that the vectors $\vec{a}+\vec{b},\vec{b}+\vec{c},\vec{c}+\vec{a}$ are also coplanar. |
| 228 | **Example 6.18**<br>If $\vec{a},\vec{b},\vec{c}$ are three vectors, prove that $[\vec{a}+\vec{c},\ \vec{a}+\vec{b},\ \vec{a}+\vec{b}+\vec{c}]=[\vec{a},\vec{b},\vec{c}]$ |
| 229 | 5. Find the altitude of a parallelepiped determined by the vectors $\vec{a}=-2\hat{i}+5\hat{j}+3\hat{k}$, $\vec{b}=\hat{i}+3\hat{j}-2\hat{k}$ and $\vec{c}=-3\vec{i}+\vec{j}+4\vec{k}$ if the base is taken as the parallelogram determined by $\vec{b}$ and $\vec{c}$. |
| 230 | 8. If $\vec{a}=\hat{i}-\hat{k}$, $\vec{b}=x\hat{i}+\hat{j}+(1-x)\hat{k}$, $\vec{c}=y\hat{i}+x\hat{j}+(1+x-y)\hat{k}$, show that $[\vec{a},\vec{b},\vec{c}]$ depends on neither $x$ nor $y$. |