# 1.11.4

## AI25BTECH11002 - Ayush Sunil Labhade

**Question**:

A vector of magnitude 9 units in the direction of the vector $-2\hat{i} - \hat{j} + 2\hat{k}$
**Solution:** The vector with magnitude 9 in the same direction would be:

$$\left\| c \begin{pmatrix} -2 & -1 & 2 \end{pmatrix}^T \right\| = 9 \tag{1}$$

$$\therefore |c| = 3 \tag{2}$$

Thus, the vector is:

$$\begin{pmatrix} -6 \\ -3 \\ 6 \end{pmatrix} \tag{3}$$

Graph: