# 1.2.10

## AI25BTECH11004-B.JASWANTH

**Question**

Find the vector joining the points **P**(2,3,0) and **Q**(-1,-2,-4) directed from **P** to **Q**.
**Solution**:

| Name | Point |
|------|-------|
| **P** | $\begin{pmatrix} 2 \\ 3 \\ 0 \end{pmatrix}$ |
| **Q** | $\begin{pmatrix} -1 \\ -2 \\ -4 \end{pmatrix}$ |

TABLE 0: variables used

The vector joining **P** and **Q** = **Q** - **P**

$$\implies \mathbf{Q} - \mathbf{P} = \begin{pmatrix} -1 \\ -2 \\ -4 \end{pmatrix} - \begin{pmatrix} 2 \\ 3 \\ 0 \end{pmatrix} = \begin{pmatrix} -3 \\ -5 \\ -4 \end{pmatrix}$$

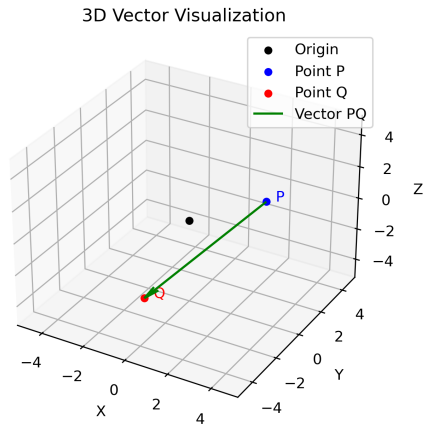$$\implies \text{The desired vector is } \begin{pmatrix} -3 \\ -5 \\ -4 \end{pmatrix}$$

Fig. 0: Line segment represent the vector