1.2.3

AI25BTECH11002 - Ayush Sunil Labhade

Question:
Find the sum of the vectors $\mathbf{a} = \hat{\imath} + 2\hat{\jmath} + \hat{k}$, $\mathbf{b} = -2\hat{\imath} + 4\hat{\jmath} + 5\hat{k}$, $\mathbf{c} = \hat{\imath} - 6\hat{\jmath} - 7\hat{k}$.
Solution: Given:

Point	Vector
a	$\begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$
b	$\begin{pmatrix} -2 \\ 4 \\ 5 \end{pmatrix}$
c	$\begin{pmatrix} 1 \\ 6 \\ -7 \end{pmatrix}$

TABLE I: Given data

$$\mathbf{r} = (\mathbf{a} + \mathbf{b} + \mathbf{c}) \tag{1}$$

Substituting values,

$$\mathbf{r} = \begin{pmatrix} 0 \\ -4 \\ -1 \end{pmatrix} \tag{2}$$