1.2.3

AI25BTECH11002 - Ayush Sunil Labhade

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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:

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: Given Data

$$\mathbf{sum} = (\mathbf{a} + \mathbf{b} + \mathbf{c}) \tag{0.1}$$

Substituting values,

$$\mathbf{sum} = -4\hat{j} - \hat{k} \tag{0.2}$$

Points A, B, C and their resultant R

Legend:
- OA
- OB
- OC
- OR
- A(1, -2, 1)
- B(-2, 4, 5)
- C(1, -6, -7)
- R(0, -4, -1)