

1.11.4

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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:

$$\|c \begin{pmatrix} -2 & -1 & 2 \end{pmatrix}^T\| = 9 \quad (0.1)$$

$$\therefore |c| = 3 \quad (0.2)$$

Thus, the vector is:

$$\begin{pmatrix} -6 \\ -3 \\ 6 \end{pmatrix} \quad (0.3)$$

Graph:

A vector B of magnitude 9 in direction of A

