

- 20** **4** Maria starts at the origin and walks along all of the vector $2\vec{i} + 3\vec{j}$, then walks along **1**
MX all of the vector $3\vec{i} - 2\vec{j}$ and finally along all of the vector $4\vec{i} - 3\vec{j}$.
1

How far from the origin is she?

A. $\sqrt{77}$

B. $\sqrt{85}$

C. $2\sqrt{13} + \sqrt{5}$

D. $\sqrt{5} + \sqrt{7} + \sqrt{13}$

B

$$2\vec{i} + 3\vec{j} + 3\vec{i} - 2\vec{j} + 4\vec{i} - 3\vec{j} = 9\vec{i} - 2\vec{j}.$$

$$\begin{aligned} \text{Distance} &= \sqrt{9^2 + (-2)^2} \\ &= \sqrt{85} \end{aligned}$$

State Mean: 0.8

* These solutions have been provided by [projectmaths](http://projectmaths.com.au) and are not supplied or endorsed by NESA.

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