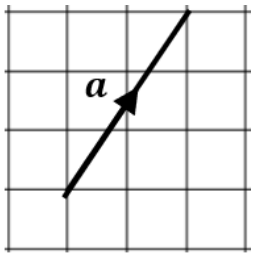
Magnitude of a Vector

(a)

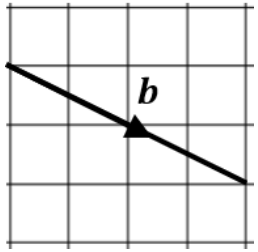
Find the magnitude of vector $\boldsymbol{a}$ to 1 decimal place.



3.6

(b)

Find the magnitude of vector $\boldsymbol{b}$, leaving your answer as a surd.

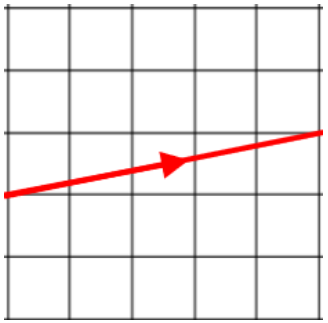


$2\sqrt{5}$

(c)

$\boldsymbol{c} = \begin{pmatrix} 5 \\ 1 \end{pmatrix}$. Draw the vector $\boldsymbol{c}$ and find its magnitude to 1 decimal place.

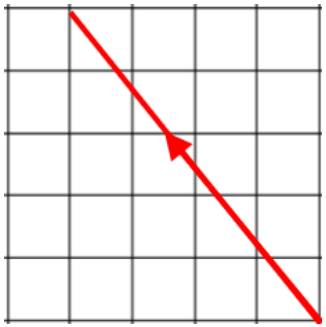
5.1



(d)

$\boldsymbol{d} = \begin{pmatrix} -4 \\ 5 \end{pmatrix}$. Draw the vector $\boldsymbol{d}$ and find its magnitude, leaving your answer in surd form.

$\sqrt{41}$



(e)

Find the magnitude of the vector $\begin{pmatrix} 8 \\ -6 \end{pmatrix}$

10

(f)

Find the magnitude of the vector $\begin{pmatrix} -7 \\ 2.5 \end{pmatrix}$, giving your answer to 1 decimal place.

7.4

(g)

Find the magnitude of the vector $\begin{pmatrix} 5 \\ \sqrt{3} \end{pmatrix}$, giving your answer as a simplified surd.

$2\sqrt{7}$

(h)

$\boldsymbol{a} = \begin{pmatrix} 6 \\ -2 \end{pmatrix}$ $\boldsymbol{b} = \begin{pmatrix} -1 \\ 14 \end{pmatrix}$

Find the magnitude of the vector $\boldsymbol{a} + \boldsymbol{b}$.

13

(i)

$\boldsymbol{a} = \begin{pmatrix} -3 \\ 5 \end{pmatrix}$ $\boldsymbol{b} = \begin{pmatrix} -1 \\ -2 \end{pmatrix}$

Find the magnitude of the vector $\boldsymbol{a} - 3\boldsymbol{b}$.

11

(j)

Find as many vectors as you can with the same magnitude as the vector $\begin{pmatrix} 2 \\ -1 \end{pmatrix}$.

$\begin{pmatrix} \pm 2 \\ \pm 1 \end{pmatrix}, \begin{pmatrix} \pm 1 \\ \pm 2 \end{pmatrix}, \begin{pmatrix} \pm\sqrt{5} \\ 0 \end{pmatrix}, \begin{pmatrix} 0 \\ \pm\sqrt{5} \end{pmatrix}$