

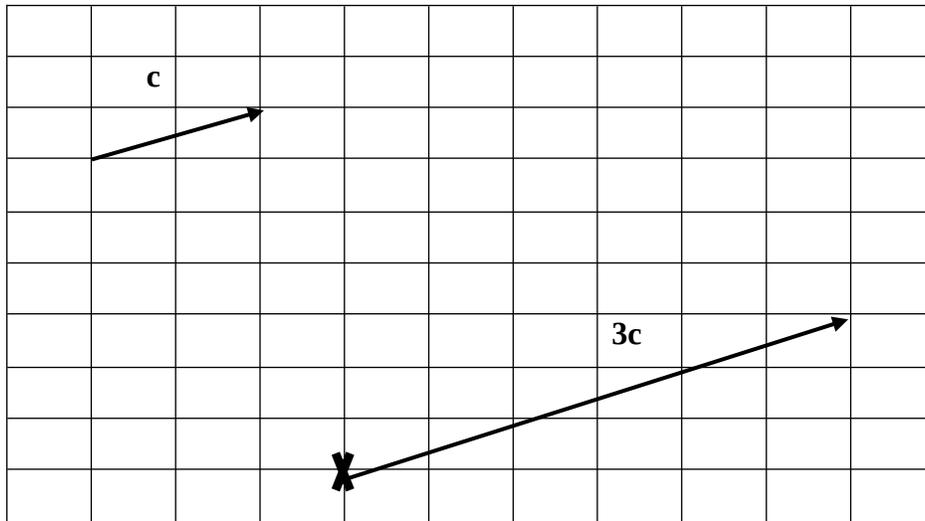
Answers Sheet

Vectors

1.

i) $\begin{pmatrix} 1 \\ 4 \end{pmatrix} + \begin{pmatrix} 2 \\ 6 \end{pmatrix} = \begin{pmatrix} 3 \\ 10 \end{pmatrix}$

ii) $2 \begin{pmatrix} 1 \\ 4 \end{pmatrix} + \begin{pmatrix} 2 \\ 6 \end{pmatrix} = \begin{pmatrix} 2 \\ 8 \end{pmatrix} + \begin{pmatrix} 2 \\ 6 \end{pmatrix} = \begin{pmatrix} 4 \\ 14 \end{pmatrix}$

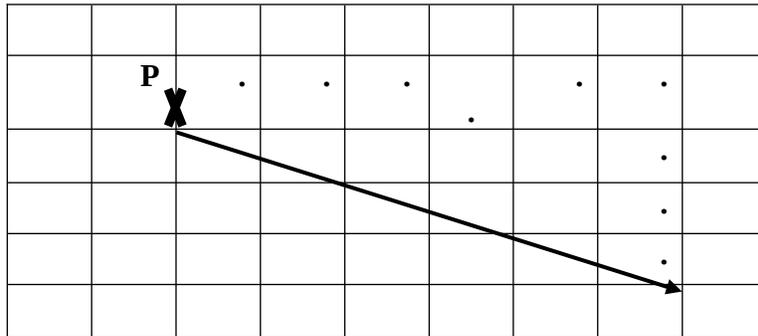


2.

i) $\begin{pmatrix} 2 \\ 3 \end{pmatrix} + \begin{pmatrix} 1 \\ 4 \end{pmatrix} = \begin{pmatrix} 3 \\ 7 \end{pmatrix}$

ii) $2 \begin{pmatrix} 2 \\ 3 \end{pmatrix} - 4 \begin{pmatrix} 1 \\ 4 \end{pmatrix} = \begin{pmatrix} 4 \\ 6 \end{pmatrix} - \begin{pmatrix} 4 \\ 16 \end{pmatrix} = \begin{pmatrix} 0 \\ -10 \end{pmatrix}$

b) From the point P, draw the vector c.

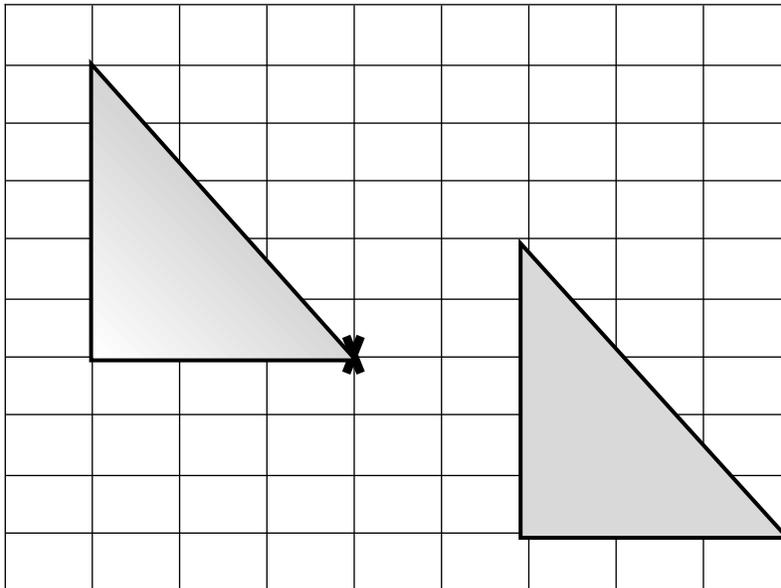


3.

i)
$$\begin{pmatrix} -4 \\ 2 \end{pmatrix} + \begin{pmatrix} 5 \\ -2 \end{pmatrix} = \begin{pmatrix} 1 \\ -0 \end{pmatrix}$$

ii)
$$3 \begin{pmatrix} -4 \\ 2 \end{pmatrix} - \begin{pmatrix} 5 \\ -2 \end{pmatrix} = \begin{pmatrix} -12 \\ 6 \end{pmatrix} - \begin{pmatrix} 5 \\ -2 \end{pmatrix} = \begin{pmatrix} -17 \\ 8 \end{pmatrix}$$

b) Translate the triangle by the vector $\begin{pmatrix} 5 \\ -3 \end{pmatrix}$



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4.

a) $\begin{pmatrix} 3 \\ -1 \end{pmatrix} - \begin{pmatrix} 4 \\ 5 \end{pmatrix} = \begin{pmatrix} -1 \\ -6 \end{pmatrix}$

b) $\begin{pmatrix} 5 \\ 1 \end{pmatrix} - \begin{pmatrix} 4 \\ -3 \end{pmatrix} = \begin{pmatrix} 1 \\ 4 \end{pmatrix}$

5.

a) $\begin{pmatrix} 5 \\ -2 \end{pmatrix} - \begin{pmatrix} 3 \\ -2 \end{pmatrix} = \begin{pmatrix} 2 \\ 0 \end{pmatrix}$

b) $\begin{pmatrix} -2 \\ 7 \end{pmatrix} - \begin{pmatrix} 2 \\ 5 \end{pmatrix} = \begin{pmatrix} -4 \\ 2 \end{pmatrix}$

6.

a) $-2a$

b) $-a + b$

c) $-b$

7.

a) $4m$

b) $-2m + 2n$

c) $-2m - 2n$

8.

a) $-4a + 2b$

b) $a(-4/2) + b(2/2)$
 $= -2a + b$

c) $4a - (4/2)a + (2/2)b$

$$= 2a + b$$
