Using Vectors in Translations

Write down the vectors which represent the following translations.

(a) 4 right then 6 up

(b) 5 right then 2 up

(c) 2 up then 5 right

(d) 1 left then 7 up

(e) 5 left then 8 down

(f) 2 left then 1 down

(g) 5 right then 5 down

(h) 6 right

(i) 9 up

(j) 3 left

Write in words the translations described by each of these vectors.

(a) $\begin{pmatrix}3\\5\end{pmatrix}$ (b) $\begin{pmatrix}6\\2\end{pmatrix}$

(c) $\begin{pmatrix}4\\0\end{pmatrix}$ (d) $\begin{pmatrix}0\\7\end{pmatrix}$

(e) $\begin{pmatrix}-2\\4\end{pmatrix}$ (f) $\begin{pmatrix}-5\\-1\end{pmatrix}$

(g) $\begin{pmatrix}8\\-2\end{pmatrix}$ (h) $\begin{pmatrix}-3\\3\end{pmatrix}$

(i) $\begin{pmatrix}-5\\-5\end{pmatrix}$ (j) $\begin{pmatrix}-10\\0\end{pmatrix}$

(a) The point (5, 4) is translated with the vector $\begin{pmatrix}2\\1\end{pmatrix}$. Write down the new coordinates of the point.

(b) The point (2, 10) is translated with the vector $\begin{pmatrix}-1\\-5\end{pmatrix}$. Write down the new coordinates of the point.

(c) The point (-3, 6) is translated with the vector $\begin{pmatrix}2\\-3\end{pmatrix}$. Write down the new coordinates of the point.

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