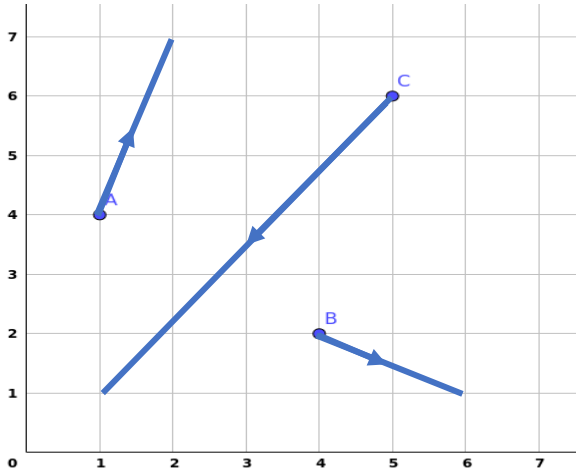
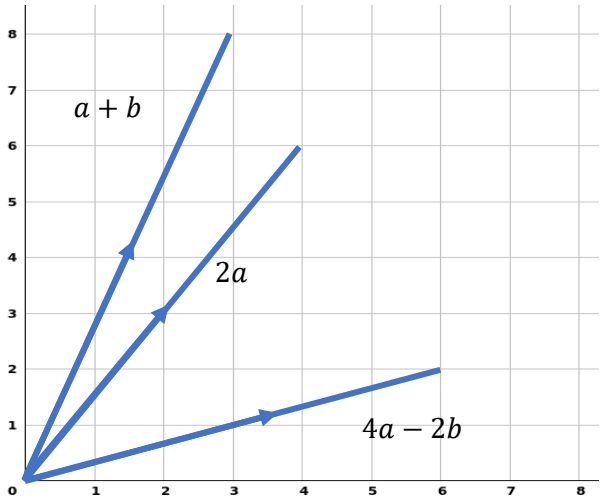
Column Vectors Mark Scheme		
1		[1] Correctly drawn vector from A [1] Correctly drawn vector from B [1] Correctly drawn vector from C
2		[1] Correctly drawn vector from $a+b$ [1] Correctly drawn vector from $2a$ [1] Correctly drawn vector from $4a-2b$
3(a)	$\begin{pmatrix}2\\5\end{pmatrix}+\begin{pmatrix}10\\-4\end{pmatrix}=\begin{pmatrix}2+10\\5-4\end{pmatrix}=\begin{pmatrix}12\\1\end{pmatrix}$	[1]
3(b)	$\begin{pmatrix}-3\\-7\end{pmatrix}+\begin{pmatrix}10\\-4\end{pmatrix}=\begin{pmatrix}-3+10\\-7-4\end{pmatrix}=\begin{pmatrix}7\\-11\end{pmatrix}$	[1]
3(c)	$-\begin{pmatrix}-3\\-7\end{pmatrix}-\begin{pmatrix}2\\5\end{pmatrix}=\begin{pmatrix}3\\7\end{pmatrix}-\begin{pmatrix}2\\5\end{pmatrix}=\begin{pmatrix}3-2\\7-5\end{pmatrix}=\begin{pmatrix}1\\2\end{pmatrix}$	[1]
4(a)	$\begin{pmatrix}3\\1\end{pmatrix}+\begin{pmatrix}5\\-2\end{pmatrix}=\begin{pmatrix}8\\-1\end{pmatrix}$	[1]
4(b)	$\begin{pmatrix}4\\14\end{pmatrix}+\begin{pmatrix}5\\-2\end{pmatrix}=\begin{pmatrix}9\\12\end{pmatrix}$	[1]
4(c)	$\begin{pmatrix}6\\21\end{pmatrix}-\begin{pmatrix}10\\-4\end{pmatrix}=\begin{pmatrix}-4\\25\end{pmatrix}$	[1]
4(d)	$\begin{pmatrix}6\\2\end{pmatrix}-\begin{pmatrix}2\\7\end{pmatrix}=\begin{pmatrix}4\\-5\end{pmatrix}$	[1]

Turn over ►

5(a)	$\begin{pmatrix} 5 \\ -1 \end{pmatrix} - \begin{pmatrix} 8 \\ -4 \end{pmatrix} = \begin{pmatrix} 5-8 \\ -1+4 \end{pmatrix} = \begin{pmatrix} -3 \\ 3 \end{pmatrix}$	[1]
5(b)	$\begin{pmatrix} 2 \\ 10 \end{pmatrix} + \begin{pmatrix} 8 \\ -4 \end{pmatrix} - \begin{pmatrix} 5 \\ -1 \end{pmatrix} = \begin{pmatrix} 5 \\ 7 \end{pmatrix}$	[1]
5(c)	$\begin{pmatrix} 3 \\ 15 \end{pmatrix} + \begin{pmatrix} 8 \\ -4 \end{pmatrix} = \begin{pmatrix} 11 \\ 11 \end{pmatrix}$	[1]
5(d)	$\begin{pmatrix} 10 \\ -2 \end{pmatrix} - \begin{pmatrix} 4 \\ -2 \end{pmatrix} = \begin{pmatrix} 6 \\ 0 \end{pmatrix}$	[1]
6	$\begin{pmatrix} 3 \\ 2 \end{pmatrix} + \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 3 \\ 0 \end{pmatrix}$ $x = 0\ y = -2$	[1] Correct x and y values
	$\begin{pmatrix} 2 \\ 2z \end{pmatrix} + \begin{pmatrix} 0 \\ -2 \end{pmatrix} = \begin{pmatrix} 2 \\ 2 \end{pmatrix}$ $z = 2$	[1] Correct answer

END