4 **(a)** Simplify $2\begin{pmatrix} 6 \\ -3 \end{pmatrix} - 3\begin{pmatrix} -1 \\ 2 \end{pmatrix}$. [2]

(b) The vector **a** is defined by $\mathbf{a} = r\begin{pmatrix} 6 \\ -3 \end{pmatrix} + s\begin{pmatrix} -1 \\ 2 \end{pmatrix}$, where r and s are constants.

Determine two pairs of values of r and s such that **a** is parallel to the y-axis and $|\mathbf{a}| = 3$. [5]