2 Two vectors, **p** and **s**, are given by

$\mathbf{p} = \begin{pmatrix} -1 \\ 3 \end{pmatrix}$ and $\mathbf{s} = \begin{pmatrix} 2 \\ y \end{pmatrix}$, where y is a real variable.

(a) Find the angle that **p** makes with the positive x-axis. **[2]**

(b) Determine the value of y for which the magnitude of $3\mathbf{p} + \mathbf{s}$ is a minimum. **[3]**