

9 A is the point $(3, -1)$.

$$\vec{AB} = \begin{pmatrix} 2 \\ -4 \end{pmatrix}$$

(a) $\vec{AC} = 2\vec{AB}$

Find the coordinates of the point C .

(..... ,) [2]

(b) The length of AB is $k\sqrt{5}$.

Find the value of k .

$k = \dots\dots\dots$ [2]

(c) P is a point on AB .

$$AP : PB = 1 : 3$$

Find the position vector of P .

(.....) [2]