June 2019
4PM1 Paper 2
Mark Scheme

Question Number	Scheme	Marks
1(a)	$\overrightarrow{AB} = \overrightarrow{OB} - \overrightarrow{OA}, = -3\mathbf{i} + 4\mathbf{j}$	M1,A1 (2)
(b)	$\left\|\overrightarrow{AB}\right\| = 5$	
	Unit vector $= \frac{1}{5}(-3\mathbf{i} + 4\mathbf{j})$ or $-\frac{1}{5}(-3\mathbf{i} + 4\mathbf{j})$ oe Accept column vectors	M1A1 (2)
		[4]

(a)

M1 For $\overrightarrow{AB} = \overrightarrow{OB} - \overrightarrow{OA}$ seen, or $\overrightarrow{AB} = (\mathbf{i} + 7\mathbf{j}) - (4\mathbf{i} + 3\mathbf{j})$ or equivalent in column form

A1 Correct simplified answer as shown or equivalent but NOT a column vector

(b)

M1 Correct modulus of their $\overrightarrow{AB}$ **and** divide $\pm$ their $\overrightarrow{AB}$ by it

A1 Correct unit vector, as shown or equivalent inc column vector

$\pm\frac{1}{5}(-3\mathbf{i} + 4\mathbf{j})$ scores M1A0 $\frac{1}{5} - 3\mathbf{i} + 4\mathbf{j}$ scores M1A0

NB: If $\overrightarrow{BA}$ is found in (a) both (b) marks are still available