

Question			Answer	Marks	AO		Guidance	
8	(i)		$\mathbf{g} = \begin{pmatrix} 0 \\ -9.8 \end{pmatrix}$ $\begin{pmatrix} 15 \\ -8 \end{pmatrix} + \begin{pmatrix} -7 \\ -2 \end{pmatrix} + 5 \begin{pmatrix} 0 \\ -9.8 \end{pmatrix} = 5\mathbf{a}$ $\mathbf{a} = \begin{pmatrix} 1.6 \\ -11.8 \end{pmatrix} \text{ or } \begin{pmatrix} 1.6 \\ -g - 2 \end{pmatrix}$	B1 M1 A1 [3]	1.2 3.3 3.4	E E C	Use of $\mathbf{F} = m\mathbf{a}$ with correct m and two terms of $\mathbf{F}$ correct	
8	(ii)		$\mathbf{s} = \frac{1}{2} \begin{pmatrix} 1.6 \\ -11.8 \end{pmatrix} (10)^2$ $\mathbf{s} = \begin{pmatrix} 80 \\ -590 \end{pmatrix}$ Position vector is $\begin{pmatrix} 82 \\ -545 \end{pmatrix}$	M1 A1ft A1 [3]	3.4 1.1 1.1	E E C	Use of $\mathbf{s} = \mathbf{ut} + \frac{1}{2}\mathbf{at}^2$ with $t = 10$ 50a	