Question Number	Scheme	Marks
6.	$(5\mathbf{i}-8\mathbf{j})=(-\mathbf{i}+4\mathbf{j})+3\mathbf{a}$	M1A1
	$\mathbf{v}=(-\mathbf{i}+4\mathbf{j})+2.5(2\mathbf{i}-4\mathbf{j})$	M1
	$\mathbf{v}=(4\mathbf{i}-6\mathbf{j})$	A1
	Speed = $\sqrt{4^2+(-6)^2}=\sqrt{52}=7.2$ (m s^{-1}) or better	M1A1
		(6)
	OR: $(4-3.5)\left[\mathbf{v}-(-\mathbf{i}+4\mathbf{j})\right]=(3.5-1)\left[(5\mathbf{i}-8\mathbf{j})-\mathbf{v}\right]$ oe	M2A1
	$\mathbf{v}=(4\mathbf{i}-6\mathbf{j})$	A1
	Speed = $\sqrt{4^2+(-6)^2}=\sqrt{52}=7.2$ (m s^{-1}) or better	M1A1
		(6)
	Notes for question 6	
	M1 For use of $\mathbf{v}=\mathbf{u}+\mathbf{a}t$, with t = 3 oe, to give an *equation* in **a** only Allow **u** and **v** reversed	
	A1 Correct unsimplified equation in **a** only	
	M1 For an equation in **v** only using their **a** and t = 2.5 oe (e.g. they may find **u** (= $(-3\mathbf{i}+8\mathbf{j})$), the velocity at t = 0, then use t = 3.5) M0 if they assume **u** = **0**	
	A1 $(4\mathbf{i}-6\mathbf{j})$	
	M1 Use of Pythagoras, including square root, to find magnitude of their **v**	
	A1 cao	
	OR: Ratio method	
	M2 for an equation in **v** only, with the correct structure	
	A1 Correct unsimplified ratio equation A1 $(4\mathbf{i}-6\mathbf{j})$	
	M1 Use of Pythagoras, including square root, to find magnitude of their **v**	
	A1 cao	