

Question	Scheme		Marks	AOs
	Allow use of column vectors in working			
3(a)	$\sqrt{4^2 + (-1)^2}$		M1	3.1a
	$\sqrt{17}$ (m s ⁻²)		A1	1.1b
			(2)	
3(b)	Use of $\mathbf{F} = m \mathbf{a}$		M1	3.1a
	$(8\mathbf{i} - 2\mathbf{j})$ (N)		A1	1.1b
			(2)	
3(c)	$\mathbf{F}_2 = (8\mathbf{i} - 2\mathbf{j}) - [(2c - 1)\mathbf{i} + (c + 1)\mathbf{j}]$		M1	3.1a
	$= (9 - 2c)\mathbf{i} - (c + 3)\mathbf{j}$		A1	1.1b
			(2)	
(6 marks)				
Notes:				
3(a)	M1	Use of Pythagoras with the root		
	A1	Accept 4.1 or better		
3(b)	M1	Uses $2 \times (4\mathbf{i} - \mathbf{j})$		
	A1	cao		
3(c)	M1	Their (b) - $[(2c - 1)\mathbf{i} + (c + 1)\mathbf{j}]$		
	A1	Accept $(9 - 2c)\mathbf{i} + (-c - 3)\mathbf{j}$		