Question Number	Scheme	Marks
6(a)	$(p\mathbf{i} + q\mathbf{j}) + (2q\mathbf{i} + p\mathbf{j}) = 2(\mathbf{i} - \mathbf{j})$ (allow 2g)	M1
	Equating coefficients of **i** or **j**	M1
	$p + 2q = 2$	A1
	$q + p = -2$	A1
	$p = -6$; $q = 4$	A1
		(5)
6(b)	$\tan\alpha = \pm 1$; e.g. 45° or $\frac{\pi}{4}$	M1
	Angle is $135°$ or $225°$ or $\frac{3\pi}{4}$ or $\frac{5\pi}{4}$	A1
		(2)
6(c)	$\mathbf{v} = (3\mathbf{i} - 4\mathbf{j}) + T(\mathbf{i} - \mathbf{j})$	M1
	$\frac{3+T}{-4-T} = \frac{11}{-13}$	M1A1
	Solve for T	**DM**1
	$T = 2.5$	A1
		(5)
		(12)
	Notes for question 6	
6(a)	M1 Use of $\mathbf{F} = m\mathbf{a}$ with $m = 2$. Correct no. of terms and must be attempting to add the two forces.	
	M1 Must have an equation in p and q *only* (no vectors) This mark is available if m has been omitted. M0 if they use a ratio i.e. $\frac{p+2q}{2} = \frac{q+p}{-2}$ but never equate coefficients.	
	A1 A correct equation in any form	
	A1 Two correct equations in any form	
	A1 cao	
6(b)	M1 (Use of trig.) to find a relevant angle	
	A1 cao accept radians or degrees	
6(c)	M1 Use of $\mathbf{v} = \mathbf{u} + \mathbf{a}T$ to obtain a velocity vector.	
	M1 Use of ratios using *their* **v (**must be a **velocity)** to produce an equation in T (allow t) only Condone sign error but must be the correct way up.	
	A1 Correct equation	
	DM1 Dependent on previous M mark for solving for T	
	A1 cao	