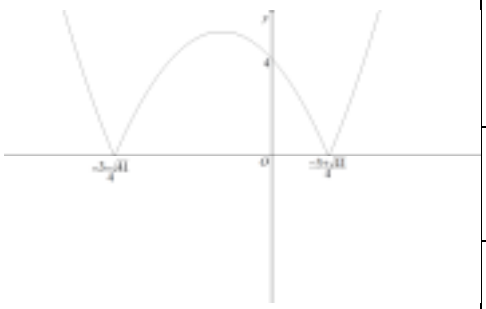
Question	Answer	Marks	Partial Marks
3(b)	$s=\frac{1}{3}(2t+1)^{\frac{3}{2}}+7t(+d)$	**B1**	For $\frac{1}{3}(2t+1)^{\frac{3}{2}}$
		M1	For attempt to integrate *their* answer to (a), must have $k(2t+1)^{\frac{1}{2}}$ in (a)
	$4=\frac{1}{3}+d$, $d=\frac{11}{3}$	**M1**	Attempt to find d
	$s=\frac{1}{3}(2t+1)^{\frac{3}{2}}+7t+\frac{11}{3}$	**A1**	
4(a)	$2\left(x+\frac{3}{4}\right)^2-\frac{41}{8}$	**B3**	**B1** for 2 **B1** for $\frac{3}{4}$ **B1** for $-\frac{41}{8}$
4(b)	$\left(-\frac{3}{4},\ -\frac{41}{8}\right)$	**B2**	**B1** for $-\frac{3}{4}$ or **FT** on *their* $-b$ **B1** for $-\frac{41}{8}$ or **FT** on *their* c
4(c)		**B1**	For shape with max in 2nd quadrant
		B1	For x-intercepts $\frac{-3\pm\sqrt{41}}{4}$
		B1	For y-intercept of 4 and cusps
4(d)	$\frac{41}{8}$	**B1**	**FT** on *their* c

Question	Answer	Marks	Partial Marks
5(a)	$\text{p}(3):\quad 162+9a+36+b=11$ $\text{p}(-1):\quad -6+a-12+b=-21$	**M1**	For attempt at $\text{p}(3)$ and $\text{p}(-1)$
	$9a+b+187=0$ $a+b+3=0$	**A1**	for both, may be implied by correct work later
	$a=-23,\qquad b=20$	**M1**	attempt to solve simultaneous equations
		A1	For both
	$\text{p}(x)=(x-2)\left(6x^2-11x-10\right)$	**M1**	For attempt to factorise or use algebraic long division
		A1	For $\left(6x^2-11x-10\right)$
5(b)	$\text{p}(x)=(x-2)(3x+2)(2x-5)$	**M1**	For attempt to factorise or use quadratic formula – must be seen
	$2,\quad -\frac{2}{3},\quad \frac{5}{2}$	**A1**	For all three solutions
6(a)	$\frac{1}{13}\begin{pmatrix}5\\-12\end{pmatrix}$	**B1**	
6(b)	$4-2k=-10r$ $1+3k=5r$	**M1**	equating like vectors to obtain 2 equations
	$r=-\frac{7}{10},\ k=-\frac{3}{2}$	**M1**	Dep on previous M mark, for attempt to solve simultaneously
		A1	
6(c)(i)	$3\mathbf{q}-2\mathbf{p}$	**B1**	
6(c)(ii)	$9\mathbf{q}-6\mathbf{p}$	**B1**	
6(c)(iii)	A common point of A and the same direction vector	**B1**	
6(c)(iv)	1:2	**B1**	
7(a)	$\frac{1}{2}\times 10^2\times\theta=35$ so $\theta=0.7$	**B1**	