Question	Answer	Marks	Guidance
2(b)	p$\left(\frac{4}{3}\right)$: $80 + 4b + 3c = 0$ oe	**M1**	Must have 3 terms. For use of $x = \frac{4}{3}$, at least once **and** equating to 0 with an attempt at simplification leading to an equation in b and c only Allow one sign error.
	p(–1): $-b + c = 6$ oe	**M1**	Must have 3 terms. For use of $x = -1$ **and** equating to 7 with an attempt at simplification leading to an equation in b and c only
	$b = -14,\ \ c = -8$	**2**	**M1 dep** on both previous **M** marks and attempt to solve simultaneously to obtain both b and c **A1** for both
2(c)	$(3x – 4)(2x^2 + 5x + 2)$	**2**	**B1** for two terms correct in the quadratic factor. Allow if seen as a quotient in long division. For both marks, need to see both factors together. $\left(x - \frac{4}{3}\right)(6x^2 - 15x + 6)$ from synthetic method gets 0 marks unless recovered.
2(d)	$(3x – 4)(2x + 1)(x + 2)$	**B1**	Must be all integers
3(a)	Mid-point (6, –5)	**B1**	
	Gradient of $AB = -\frac{5}{2}$	**B1**	
	Perpendicular gradient $\frac{2}{5}$	**M1**	For *their* perp gradient
	$–9 + 5 = \frac{2}{5}(x – 6)$ oe $x = –4$	**2**	**Dep M1** for attempt at the equation of the perpendicular bisector with *their* mid-point and *their* perpendicular gradient and use of $y = –9$
3(b)	(16, –1)	**2**	**B1** for each, **FT** on 12 – *their a* for the x-coordinate.
4(a)	Area under graph = 800 $\frac{1}{2}(10 \times 10) + (10 \times 10) + \frac{1}{2}(10(10 + V)) +$ $\frac{15V}{2} = 800$	**M1**	For attempt to find the area, allow one error and one omission.
	$V = 48$	**A1**	

Question	Answer	Marks	Guidance
4(b)	$(-)\frac{\textit{their } V}{15}$	**M1**	Allow omission of negative sign.
	$-\frac{16}{5}\text{ms}^{-2}$ oe	**A1**	**FT** on *their V* but must be negative.
5(a)	$(5\sqrt{3}-6)^2+(5\sqrt{3}+6)^2-2(5\sqrt{3}-6)$ $(5\sqrt{3}+6)\cos 120°$ soi	**M1**	For the correct use of the cosine rule Condone missing brackets if intention is clear
	$75+36-60\sqrt{3}+75+36+60\sqrt{3}+75-36$	**M1**	**M1 Dep** must see sufficient detail to be sure that a calculator is not being used. This is the minimum acceptable $75+36-60\sqrt{3}+75+36+60\sqrt{3}+39$
	261	**A1**	Maybe implied by $\sqrt{261}$
	$3\sqrt{29}$	**A1**	
5(b)	$\frac{2+5\sqrt{5}}{4}=\frac{1}{2}(3+2\sqrt{5})\times QR\times\sin 30°$ soi	**M1**	For the correct use of the area of the triangle. Condone missing brackets if intention is clear
	$\frac{2+5\sqrt{5}}{3+2\sqrt{5}}\times\frac{3-2\sqrt{5}}{3-2\sqrt{5}}$ or $\frac{2+5\sqrt{5}}{3+2\sqrt{5}}\times\frac{-3+2\sqrt{5}}{-3+2\sqrt{5}}$	**M1**	**M1 dep** for a correct attempt to rationalise *their QR* .must be the same two terms in the numerator and denominator to rationalise
	$\frac{6+15\sqrt{5}-4\sqrt{5}-50}{9-20}$ $\frac{11\sqrt{5}-44}{-11}$	**M1**	**M1 dep**, must see sufficient detail to be sure that a calculator is not being used. This is the minimum acceptable $\frac{6+15\sqrt{5}-4\sqrt{5}-50}{-11}$
	$4-\sqrt{5}$	**A1**	