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**	

Question	Answer	Marks	Partial Marks
7(b)	Arc length CD: 7	**B1**	
	$\sin(0.35) = \frac{AB/2}{12}$	**M1**	For a complete method to find AB, could be using cosine rule
	$AB = 8.23(0)$	**A1**	
	Perimeter = $7 + 4 + 8.23 = 19.2$	**A1**	
7(c)	Area of triangle $= \frac{1}{2}12^2 \sin 0.7$	**M1**	For complete attempt at triangle area, may use equivalent method
	Area of triangle $= 46.4$	**A1**	
	Shaded area $= 11.4$	**A1**	Follow through on *their* area of the triangle
8(a)	$\frac{n}{2}(14 + (n-1)0.4)$	**B1**	
	$\frac{n}{2}(14 + (n-1)0.4) > 300$ $0.4n^2 + 13.6n - 600 > 0$	**M1**	Attempt to form a 3 term inequality and find the positive critical value
	Positive critical value 25.29	**A1**	
	26 terms	**A1**	
8(b)	$a + ar = 9$	**B1**	
	$\frac{a}{1-r} = 36$	**B1**	
	$36(1+r)(1-r) = 9$	**M1**	attempt at solution of simultaneous equations
	$r = \frac{\sqrt{3}}{2}$	**A1**	

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