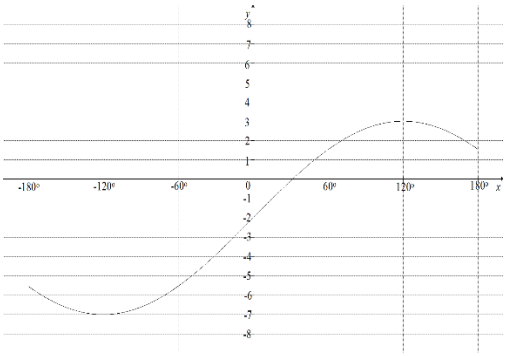
Question	Answer	Marks	Guidance
1(a)	$\left(\text{f}\left(x\right) \text{ or } y=\right)\ -3(3x+1)(x-1)(2x-5)$	**3**	**B1** for $k\left(x+\frac{1}{3}\right)(x-1)\left(x-\frac{5}{2}\right)$ and no other work that would gain marks. **B2** for $m(3x+1)(x-1)(2x-5)$ and no other work that would gain marks.
1(b)	$-\frac{1}{3}<x<1$	**B1**	Must be in terms of x
	$x>\frac{5}{2}$	**B1**	Must be in terms of x
2(a)	5	**B1**	
2(b)	480^{o}	**B1**	
2(c)		**3**	**To obtain any marks the graph must be a curve with one min in the third quadrant and one max in the first quadrant.** **B1** for the shape, starting in the 3rd quadrant and ending in the 1st quadrant. Must cross the x-axis only once, between 0^{o} and 60^{o}. Must extend for the complete domain starting with $-6<y<-5$ and ending with $1<y<2$ **B1** for passing through $(0,\ -2)$ **B1** for passing though $(120^{\text{o}},\ 3)$ and $(-120^{\text{o}},\ -7)$ soi
3	$\ln(y+2)=mx^2+c$ soi	**B1**	
	Either of: $9.37=2.25m+c$ $3.92=4.75m+c$	**M1**	For at least one correct equation involving m and c
	$m=-2.18,\ -\frac{109}{50}$ oe $c=14.3,\ 14.28,\ 14.275,\ \frac{571}{40}$	**2**	**Dep M1** for attempt to solve for at least one unknown. **A1** for both.
	$y=\text{e}^{\left(14.3-2.18x^2\right)}-2$ oe	**A1**	**FT** on the first **M1** for *their* m and c