1		$(x+3)^2-16$	M1 A1	for $(x+3)^2$ or $(x^2+6x-7=)\ x^2+2ax+a^2+b$ cao

2	(2, –9)	P1	substitutes $x=0$, $y=-5$ into $y=x^2+ax+b$ $(b=-5)$ **or** substitutes $x=5$, $y=0$ into $y=x^2+ax+b$ $(0=25+5a+b)$ **or** starts process to find other intercept, eg writes $y=(x-5)(x-k)$	
		P1	for complete process to find two intercepts, eg. substitutes the second point into $y=x^2+ax+b$ and solves to find a $(=-4)$ and b $(=-5)$ **or** substitutes $x=0$, $y=-5$ into $y=(x-5)(x-k)$ and solves to find k $(=-1)$	
		P1	(dep on P2) for factorising or completing the square of x^2+ "–4" $x+$ "–5" and identifying the x-coordinate of the turning point **or** for a complete process to find the x-coordinate of the turning point, eg (5 + "–1")/2	
		A1	cao	x-coordinate of 2 with no or incorrect working gets NO marks

3	(i)	3, 8	M1	for $a=3$, may be seen in working or as part of an expression, eg $(x-3)^2-9$	9 does not have to be seen for this mark
			A1	for $a=3$, $b=8$	
	(ii)	3, –8	B1	for 3, –8 **or** ft (i)	

4	Sketch graph with TP at (2, -13) and intercepts at (0, -5), $(2+\sqrt{\frac{13}{2}}, 0)$ and $(2-\sqrt{\frac{13}{2}}, 0)$	B1	for a parabola drawn with intercept at the point (0, – 5)	
		M1	for the start of a method to find the roots of $y=0$, eg. $2(x-2)^2-13\ (=0)$ oe or $(x=)\ \frac{--8\pm\sqrt{(-8)^2-4\times2\times-5}}{2\times2}$	
		M1	(dep) for method to find the roots, eg. $2\pm\sqrt{\frac{13}{2}}$ oe	
		B1	for turning point at (2, –13)	Turning point may be just seen and labelled on the sketch
		C1	for a fully correct parabola drawn with turning point at (2, –13) and intercepts at (0, –5), $(2+\sqrt{\frac{13}{2}}, 0)$ oe and $(2-\sqrt{\frac{13}{2}}, 0)$ oe clearly shown	

5	– 12, – 7	B1	cao	

6	(3, 36)	P1	for factorising –3 from the expression, eg $-3(x^2-6x-3)$ **or** $-3(x^2-6x)+9$	
		P1	for starting the process to complete the square, eg $(x-3)^2-9$	ft from their factorising if only one error
		P1	for completing the process of completing the square, eg $-3[(x-3)^2-12]$ **or** $-3(x-3)^2+36$	
		A1	cao	An answer only and no working is 0 marks