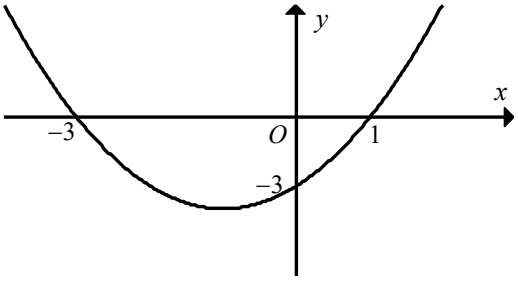
Question	Answer	Marks	Partial Marks
1(a)	$(x+1)^2-4$ oe $(-1, -4)$	**B3**	**B2** $y=(x+1)^2-4$ oe or **B1** $y=(x+1)^2+k$, where k is a constant
1(b)	Correct curve  	**B2**	**B1** for correct shape in 4 quadrants with minimum in the 3rd quadrant **B1** for an attempt at a quadratic graph with intercepts marked at –3 on the y-axis and –3 and 1 on the x-axis
2	$(3k-2)^2-4(2)(k)[*0]$	**M1**	Uses b^2-4ac * could be any inequality sign or =
	$9k^2-20k+4[*0]$	**A1**	Correctly simplifies to 3-term quadratic
	$(9k-2)(k-2)$	**M1**	**FT** Factorises or solves *their* 3-term quadratic
	Critical values $\frac{2}{9}$, 2	**A1**	
	$k<\frac{2}{9}$ $k>2$	**A1**	Mark final answer
3(a)	103 680	**2**	**M1** for $k\times5!\times4!\times3!$ where $k=1, 2, 3, 6$
3(b)	270	**3**	**M2** for ${}^5C_1\times{}^4C_2\times{}^3C_1+{}^5C_1\times{}^4C_1\times{}^3C_2+$ ${}^5C_2\times{}^4C_1\times{}^3C_1$ oe OR **M1** for at least one correct product If 0 scored then **SC1** for a final answer of 540 or 264

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