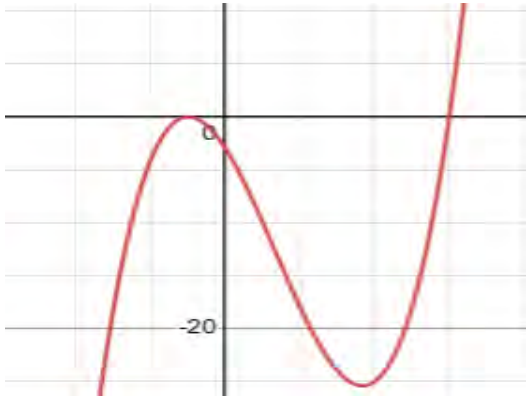


Question		Answer	Marks	AO	Guidance
4	(a)	$4 \times 3^3 - 8 \times 3^2 - 11 \times 3 - 3$ $[= 108 - 72 - 33 - 3] = 0$	B1 [1]	1.1	arithmetic must be correct and 4 terms must be seen
4	(b)	$(4x^2 + 4x + 1)$ seen $(x - 3)(2x + 1)^2$ isw or $a = 2, b = 1$ isw	M1 A1	2.1 1.1	may be embedded in long/synthetic division; allow one coefficient error allow $(x - 3)(2x + 1)(2x + 1)$; mark the final answer; supporting working must be seen for the award of this mark
		Alternative method $a^2 = 4, -3a^2 + 2ab = -8,$ $b^2 - 6ab = -11, -3b^2 = -3$ $a = 2, b = 1$ isw	M1 A1		for any two equations from equating coefficients; may be embedded in expansion; allow one coefficient error supporting working must be seen for the award of this mark
			[2]		
4	(c)		M1 A1 [2]	1.1 1.1	cubic of correct orientation; curve touches x-axis on correct side of origin for their $-\frac{b}{a}$ and intersects positive x-axis; intercepts at $(-\frac{1}{2}, 0), (3, 0)$ and $(0, -3)$ labelled or identified on sketch; local minimum in 4 th quadrant