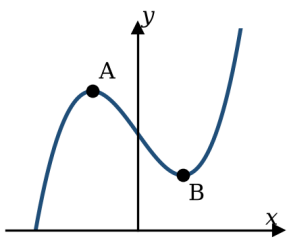
Day 338	A Level Maths: C Tier 10-a-day
1 A sequence is defined by $u_{n+1} = -2u_n + 3$, $u_1 = -1$. Find u_2, u_3 and u_4.	
2 The vector $\mathbf{p} = -4\mathbf{i} - 3\mathbf{j}$. Find (a) $\lvert\mathbf{p}\rvert$, (b) the angle p makes with the positive x-axis, measured anticlockwise (1 d.p.).	
3 A particle moves with constant velocity $(4\mathbf{i} - 3\mathbf{j})$ m s^{-1}. At time t = 0 its position vector is $(\mathbf{i} + 7\mathbf{j})$ m. (a) Find its position vector when t = 2. (b) Find the distance it travels in 2 s.	
4 Here are 7 values: 9, 8, 20, 5, 6, 4, 10 Find the mean and the standard deviation, to 3 s.f.	
5 The diagram shows the curve $y = x^3 - 3x + 5$. A and B are turning points. Find the coordinates of A and B. 	

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6 A is $(-5, -6)$ and B is $(-1, -4)$. Find the equation of the perpendicular bisector of AB, in the form $ax + by = c$ with integer a, b and c.	
7 Solve $1.5^x = 10$. Give your answer to 3 significant figures.	
8 $X \sim B(12, p)$. H_0: $p = 0.3$, H_1: $p \neq 0.3$. In a sample, $x = 1$. Test at the 5% significance level.	
9 In a geometric sequence $u_3 = 36$ and $u_4 = -108$. Find the first term and the common ratio.	
10 A particle of mass 3 kg slides from rest down a smooth plane inclined at angle α to the horizontal, where $\sin \alpha = \frac{4}{5}$. Take $g = 9.8$ m s^{-2}. Find (a) its acceleration, (b) its speed after 3 s.	