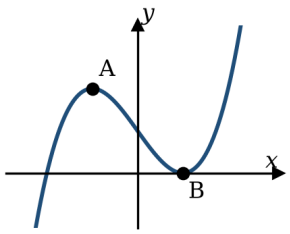
Day 86	A Level Maths: C Tier 10-a-day
1 Solve $e^{4x+1} = 5$. Give your answer to 3 significant figures.	
2 Show, by a counter-example, that the statement "If $x^2 > y^2$ then $x > y$" is false.	
3 Seven daily sunshine readings (hours) from the Large Data Set are: 5, 2.2, n/a, 0.2, n/a, 3.2, 0.6. Here 'n/a' means no reading was recorded. Leaving these out, find the mean to 3 s.f.	
4 Sketch $y = 4 \times 3^x - 36$. Write down the equation of the asymptote and the coordinates where the curve meets the axes.	
5 Here are 5 values: 9, 8, 5, 8, 19 Find the mean and the standard deviation, to 3 s.f.	

Day 86 **A Level Maths: C Tier 10-a-day**

6 The diagram shows the curve $y = x^3 - 3x + 2$. A and B are turning points. Find the coordinates of A and B.



7 Prove by contradiction that if $3n + 4$ is even, then n is even, where n is an integer.

8 A constant force of 20 N pulls a crate 6 m along rough horizontal ground against a constant frictional force of 5 N. Find (a) the work done by the pulling force, (b) the work done against friction.

9 $\frac{2x + 5}{(x + 4)(x + 3)} \equiv \frac{A}{x + 4} + \frac{B}{x + 3}$.

Find A and B, and hence find $\int \frac{2x + 5}{(x + 4)(x + 3)}\,dx$.

10 A particle moves in a straight line. Its velocity at time t seconds ($0 \leq t \leq 8$) is $v = (-3t^2 + 24t)$ m s^{-1}. Find the maximum velocity and the time at which it occurs.