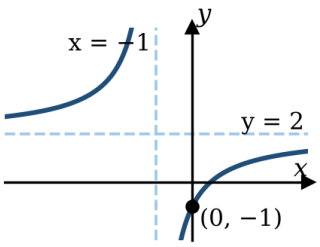
Day 170	A Level Maths: C Tier 10-a-day
1 Write $3 \log 2 + \log 7 - \log 2$ as a single logarithm, giving it in the form $\log N$ where N is an integer.	
2 $f(x) = \frac{1}{x - 3} - 4$, $x \neq 3$. Find the range of f.	
3 A skier starts from rest and moves in a straight line with constant acceleration 2 m s^{-2}. It travels 49 m. Find the time taken.	
4 $P(B) = 0.9$ and $P(A \mid B) = 0.5$. Find $P(A \cap B)$.	
5 Divide $f(x) = x^4 - 3x^2 + 5x - 10$ by $(x - 1)$. Find the quotient and the remainder.	

Day 170 **A Level Maths: C Tier 10-a-day**

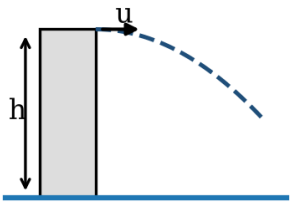
6 The curve $y = x^2$ and the line $y = 5x$ meet at the origin and at P.
Find the area enclosed between them.

7 The diagram shows the graph of $y = \frac{k}{x - a} + c$ with its asymptotes. Find the values of a, c and k.



8 The mean of 20 ages of the men is 40. The mean of 30 ages of the women is 37.
Find the mean of all 50 values.

9 A ball is thrown horizontally at 8 m s^{-1} from the top of a vertical cliff of height 44.1 m above the sea. Take g = 9.8 m s^{-2}. Find (a) the time taken to reach the sea, (b) the horizontal distance of the landing point from the cliff.



10 $y = x^3 - 27x$.
Find the coordinates of the stationary points and determine their nature.