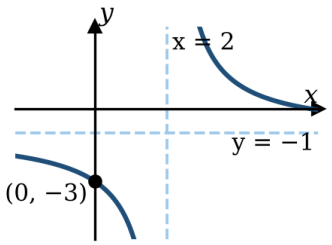
Day 136	A Level Maths: C Tier 10-a-day
1 A particle moving in a straight line with constant acceleration 3 m s^{-2} travels 250 m in 10 s. Find its initial speed.	
2 Find an equation of the line through A(−5, 0) and B(3, 2), in the form ax + by + c = 0, where a, b and c are integers.	
3 A stratified sample of size 20 is taken from 200 students: 120 Biology, 50 Chemistry, 30 Physics. How many Chemistry should be in the sample?	
4 A particle moves in a straight line. Its acceleration at time t seconds is (2t − 3) m s^{-2}. When t = 0 its velocity is 2 m s^{-1}. Find its velocity when t = 3.	
5 X ~ N(20, 5^2). Given that P(X < a) = 0.6, find a to 3 s.f.	

Day 136 **A Level Maths: C Tier 10-a-day**

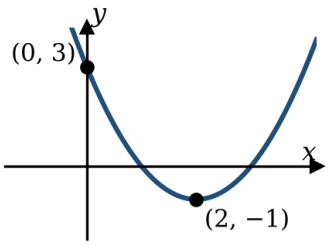
6 (a) Show that $x^2 - 4x - 3 = 0$ can be rearranged to $x = \sqrt{4x + 3}$.
(b) Use x_{n+1} = this formula with $x_0 = 3$ to find x_1, x_2 to 3 d.p.

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 Solve $\ln(x + 2) - \ln x = \ln 3$.

9 The diagram shows a sketch of a quadratic curve.
Find its equation in the form $y = a(x - p)^2 + q$.



10 Solve $\sin(x + 45°) = -\frac{\sqrt{3}}{2}$ for $0° \leq x \leq 360°$.