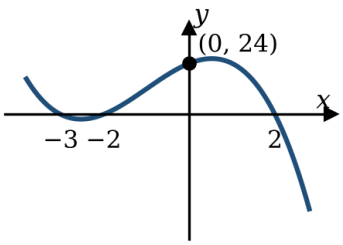
Day 148	A Level Maths: C Tier 10-a-day
1 $f(x) = x^3 - 4x - 8$. Show that $f(x) = 0$ has a root between $x = 2$ and $x = 3$.	
2 A lift of mass 400 kg is raised by a vertical cable with constant acceleration 0.75 m s^{-2} upwards. Take g = 9.8 m s^{-2}. Find the tension in the cable.	
3 Write $5 \log 2 + \log 5 - \log 10$ as a single logarithm, giving it in the form log N where N is an integer.	
4 Sketch $y = \frac{-6}{x - 4} + 2$. Write down the equations of the asymptotes and the coordinates where the curve meets the axes.	
5 A car moving in a straight line with constant acceleration increases its speed from 10 m s^{-1} to 26 m s^{-1} in 10 s. Find the distance it travels in this time.	

Day 148	A Level Maths: C Tier 10-a-day
6 A model relates the amount, y litres, left in a tank to the time, t hours, since it was filled by $y = 54 - 8.5t$. Interpret the value 54 in this context.	
7 The diagram shows the curve y = f(x), where f(x) is a cubic. Find f(x) in the form $k(x - a)(x - b)(x - c)$. 	
8 A rectangle has perimeter 40 cm. Find the maximum possible area of the rectangle and the dimensions that give it.	
9 The probability that a patient takes the drug is 0.3. If so, the probability that the patient recovers is 0.6; otherwise it is 0.2. Given that the patient recovers, find the probability that a patient takes the drug.	
10 Sketch $y = 2(x + 4)(x - 1)(x - 4)$. Write down the coordinates of the points where the curve meets the axes.	