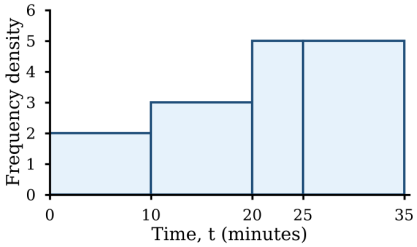
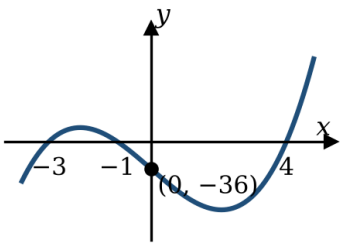
Day 353	A Level Maths: C Tier 10-a-day
1 A train moving in a straight line with constant acceleration increases its speed from 6 m s^{-1} to 18 m s^{-1} in 5 s. Find the distance it travels in this time.	
2 An arithmetic sequence begins 1, 4, 7, 10, ... Find (a) an expression for the nth term, (b) the 24th term.	
3 $f(x) = x^3 - 3x - 4$. Show that $f(x) = 0$ has a root between $x = 2$ and $x = 2.5$.	
4 The histogram shows the times, t minutes, taken by some people to complete a puzzle. Find the number of people who took between 10 and 20 minutes. 	
5 Use integration by parts to find $\int x\, e^{3x}\, dx$.	

Day 353 **A Level Maths: C Tier 10-a-day**

6 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).



7 $x_{n+1} = (2x_n + 10)^{\frac{1}{3}}$, with $x_0 = 1$.
Find x_1, x_2 and x_3 to 3 decimal places.

8 A rope pulls a box with a force of 30 N at an angle of 45° above the horizontal. Find the horizontal and vertical components of the force, to 3 s.f.

9 X ~ B(150, 0.2). Use a normal approximation to find P(X ≤ 35), to 3 s.f.

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

