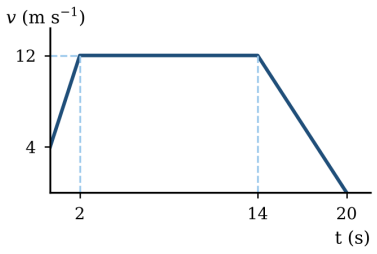
Day 135	A Level Maths: C Tier 10-a-day
1 Sketch $y = 2(x + 5)(x + 2)(x - 2)$. Write down the coordinates of the points where the curve meets the axes.	
2 Find (a) $\int \frac{3}{x}\,dx$ (b) $\int 12 \sin 4x\,dx$	
3 A particle has initial velocity $(3\mathbf{i} - 5\mathbf{j})$ m s^{-1} and constant acceleration $(3\mathbf{i} - \mathbf{j})$ m s^{-2}. Find its velocity after 3 s.	
4 Emails arrive at an average rate of 2 per hour, at random. Find the probability of at most 6 in 3 hours, to 3 s.f.	
5 The graph shows the velocity of a cyclist. (a) Find the acceleration in the first 2 s. (b) Find the deceleration in the last 6 s. (c) Find the total distance travelled. 	

Day 135	A Level Maths: C Tier 10-a-day
6 Use the product rule to differentiate $y = x^3e^{2x}$.	
7 $f(x) = x^3 - 19x - 30$ (a) Show that $(x + 2)$ is a factor of $f(x)$. (b) Factorise $f(x)$ completely.	
8 $X \sim B(60, 0.3)$. Use a normal approximation to find $P(X \geq 18)$, to 3 s.f.	
9 An arithmetic sequence begins $-6, -7, -8, -9, \ldots$ Find (a) an expression for the nth term, (b) the 11th term.	
10 $\frac{-4x - 15}{(x + 3)(x + 4)} \equiv \frac{A}{x + 3} + \frac{B}{x + 4}$. Find A and B, and hence find $\int \frac{-4x - 15}{(x + 3)(x + 4)}\,dx$.	