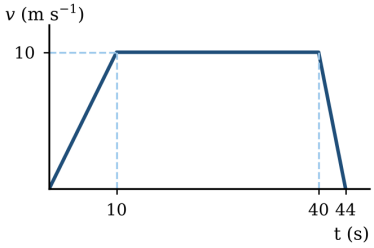
Day 34	A Level Maths: C Tier 10-a-day
1 Solve $-5x + 5 \geq 8$.	
2 Write 2 log 2 + log 7 − log 2 as a single logarithm, giving it in the form log N where N is an integer.	
3 Show, by a counter-example, that the statement "If n^2 is a multiple of 18 then n is a multiple of 18" is false, where n is a positive integer.	
4 Write down the exact values of (a) cot 240° (b) sec 300°	
5 X ~ B(8, 0.4). Find P(X > 5), giving your answer to 3 s.f.	

Day 34 **A Level Maths: C Tier 10-a-day**

6 The graph shows the velocity of a cyclist over 44 seconds as it moves in a straight line.
(a) Find its acceleration in the first 10 s.
(b) Find the total distance travelled.



7 Find
(a) $\int 8 \sin 4x \, dx$
(b) $\int (2e^x + \frac{4}{x}) \, dx$

8 Express $\frac{2x - 4}{(x - 2)^2}$ in the form $\frac{A}{(x - 2)} + \frac{B}{(x - 2)^2}$.

9 $X \sim B(40, p)$. H_0: $p = 0.25$, H_1: $p > 0.25$.
Find the critical region for a test at the 5% significance level.

10 A 6 kg particle on a smooth horizontal table is joined by a light string over a smooth pulley to a hanging 1 kg particle, as shown. The system is released from rest. Take $g = 9.8$ m s^{-2}. Find the tension.

