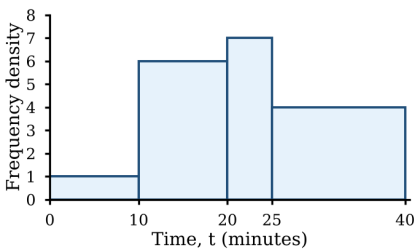
Day 7	A Level Maths: C Tier 10-a-day
1 The vector $\mathbf{p} = -3\mathbf{i} + 4\mathbf{j}$. Find (a) $\lvert\mathbf{p}\rvert$, (b) the angle p makes with the positive x-axis, measured anticlockwise (1 d.p.).	
2 For events A and B, P(A) = 0.45, P(B) = 0.7 and P(A ∪ B) = 0.75. (a) Find P(A ∩ B). (b) Find P(A′ ∩ B′).	
3 Find the sum of the first 27 terms of the series 3 + 7 + 11 + 15 + ...	
4 By writing 15° as 60° − 45°, find the exact value of cos 15°.	
5 The histogram shows the times, t minutes, taken by some people to complete a puzzle. Find the number of people who took between 0 and 20 minutes. 	

Day 7	A Level Maths: C Tier 10-a-day
6 A is $(-4, 1)$ and B is $(-8, 3)$. Find the equation of the perpendicular bisector of AB, in the form $ax + by = c$ with integer a, b and c.	
7 A car's engine works at a constant rate of 45 kW. Find the driving force when the vehicle is moving at 15 m s^{-1}.	
8 Express $15 \sin x + 8 \cos x$ in the form $R \cos(x - \alpha)$, where $R > 0$ and $0° < \alpha < 90°$. Give α to 1 decimal place.	
9 Divide $f(x) = x^3 - 6x^2 + 13x - 25$ by $(x - 4)$. Find the quotient and the remainder.	
10 A car travelling at 24 m s^{-1} brakes uniformly and comes to rest after travelling 60 m. (a) Find the deceleration. (b) Find the time taken to stop.	