Day 209	A Level Maths: C Tier 10-a-day
1 Solve $8 < 3x - 4 \leq 17$.	
2 A car of mass 1000 kg is driven along a straight horizontal road by a driving force of 500 N against a constant resistance of 300 N. Find the acceleration of the car.	
3 Sam says that $n^2 + 5n + 5$ is prime for every positive integer n. Show that Sam is wrong.	
4 An arrow is projected vertically upwards with speed 35 m s^{-1} from ground level. Taking g = 9.8 m s^{-2}, find the maximum height it reaches above the ground.	
5 Find the sum of the first 12 terms of the series $-7 - 4 - 1 + 2 + ...$	

Day 209	A Level Maths: C Tier 10-a-day
6 Solve $\cos x = -0.60$ for $0° \leq x \leq 360°$. Give your answers to 1 decimal place.	
7 A population is $N(\mu, 5^2)$. H_0: $\mu = 45$, H_1: $\mu \neq 45$. A sample of 64 has mean $\bar{x} = 46.69$. Test at the 5% level. Critical value: $z = \pm 1.96$.	
8 Differentiate $y = \cot 2x$ with respect to x.	
9 $X \sim B(40, 0.4)$. Use a normal approximation to find $P(X \geq 13)$, to 3 s.f.	
10 $y = x^3 - 3x^2 - 24x + 3$. Find the coordinates of the stationary points and determine their nature.	