Day 230	A Level Maths: C Tier 10-a-day
1 A particle moving in a straight line with constant acceleration 2 m s^{-2} travels 33 m in 3 s. Find its initial speed.	
2 For events A and B, P(A) = 0.6, P(B) = 0.45 and P(A ∪ B) = 0.8. (a) Find P(A ∩ B). (b) Find P(A′ ∩ B′).	
3 Find the equation of the tangent to the curve $y = 4\sqrt{x} - x$ at the point where x = 9.	
4 Divide $f(x) = 2x^4 + 4x^3 - 20x^2 - 17x + 3$ by (x + 4). Find the quotient and the remainder.	
5 Solve $\cos x = -\frac{\sqrt{3}}{2}$ for $0 \leq x \leq 2\pi$. Give your answers in terms of π.	

Day 230	A Level Maths: C Tier 10-a-day
6 Sketch $y = \|3x + 3\|$. Write down the coordinates of the vertex and of the point where the graph meets the y-axis.	
7 Use integration by parts to find $\int x\, e^{5x}\, dx$.	
8 Solve $x^2 - 8x - 2 = 0$, giving your answers in the form $p \pm \sqrt{q}$.	
9 $X \sim N(30, 2^2)$. Find $P(X < 34)$, giving your answer to 3 s.f.	
10 A crate of mass 4 kg is pulled along rough horizontal ground at constant speed by a horizontal force of 23.52 N. Take $g = 9.8$ m s^{-2}. Find the coefficient of friction between the crate and ground.	