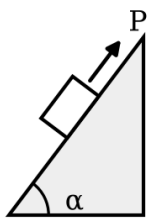
Day 300	A Level Maths: C Tier 10-a-day
1 Sketch $y = (x + 1)(x - 4)(x - 5)$. Write down the coordinates of the points where the curve meets the axes.	
2 A particle moves in a straight line with constant acceleration. Its speed increases from 7 m s^{-1} to 19 m s^{-1} as it travels 312 m. Find the acceleration.	
3 The table shows values of $y = f(x)$. x: 1 1.25 1.5 1.75 2 y: 6.1 2.1 1.5 6.9 8.5 Use the trapezium rule to estimate the area under the curve between $x = 1$ and $x = 2$.	
4 Sketch $y = \|4x + 3\|$. Write down the coordinates of the vertex and of the point where the graph meets the y-axis.	
5 A particle of mass 13 kg rests on a smooth plane inclined at α to the horizontal, where $\tan\alpha = \frac{4}{3}$. It is held by a force P N up the slope. Take $g = 9.8$ m s^{-2}. Find P and the normal reaction. 	

Day 300	A Level Maths: C Tier 10-a-day
6 The curve $y = 6x - x^2$ and the line $y = 1x$ meet at the origin and at P. Find the area enclosed between them.	
7 $X \sim B(40, p)$. H_0: $p = 0.25$, H_1: $p > 0.25$. Find the critical region for a test at the 1% significance level.	
8 Expand $(1 + 2x)^{-1}$ in ascending powers of x up to and including the term in x^2. State the range of values of x for which the expansion is valid.	
9 The discrete random variable X has this distribution. x: 2, 3, 4, 5 P(X = x): 0.3, 0.1, 0.3, 0.3 Find E(X) and Var(X).	
10 Solve $\sin^2 x - \sin x = 0$ for $0° \leq x \leq 360°$.	