Day 244	A Level Maths: C Tier 10-a-day
1 $f(x) = x^2 + 5$, $x \geq 0$. Find $f^{-1}(x)$ and state its domain.	
2 The curve $y = ab^x$ passes through (0, 5) and (3, 135). Find the values of a and b.	
3 In how many ways can a team of 3 be chosen from 11 students?	
4 Find the remainder when $-x^3 - 6x^2 + 5x - 6$ is divided by $(x + 3)$.	
5 $y = x^3 + 3x^2 - 9x - 1$. Find the coordinates of the stationary points and determine their nature.	

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6 A stone is projected from level ground with velocity $(6\mathbf{i} + 19.6\mathbf{j})$ m s^{-1} ($\mathbf{i}$ horizontal, $\mathbf{j}$ vertically up). Take g = 9.8 m s^{-2}. (a) Find the time of flight. (b) Find the horizontal range.	
7 Find the set of values of x satisfying both $2x + 1 < 3$ and $x^2 - 4 < 0$.	
8 X ~ B(150, 0.3). Use a normal approximation to find P(X ≤ 48), to 3 s.f.	
9 Solve $6^{x+2} = 200$. Give your answer to 3 significant figures.	
10 A string pulls a box with a force of 40 N at an angle of 45° above the horizontal. Find the horizontal and vertical components of the force, to 3 s.f.	