Day 57	A Level Maths: C Tier 10-a-day
1 A resultant force of 1.5 N gives a body an acceleration of 0.5 m s^{-2}. Find the mass of the body.	
2 Solve $\tan x = \sqrt{3}$ for $0° \leq x \leq 180°$.	
3 A lorry 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.	
4 The point P(−2, 3) lies on the curve y = f(x). Write down the coordinates of the image of P on (a) y = f(x) + 3 (b) y = f(−x)	
5 X ~ B(25, p). H_0: p = 0.3, H_1: p < 0.3. In a sample, x = 5. It is given that $P(X \leq 5) = 0.1935$. Test H_0 at the 10% significance level.	

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6 The circle $(x + 3)^2 + y^2 = 13$ passes through P$(-1, -3)$. Find the gradient of the tangent to the circle at P.	
7 $\frac{x}{(x + 4)(x + 2)} \equiv \frac{A}{x + 4} + \frac{B}{x + 2}$. Find A and B, and hence find $\int \frac{x}{(x + 4)(x + 2)}\, dx$.	
8 The table shows grouped data. Class: $20 \leq x < 30$; $30 \leq x < 40$; $40 \leq x < 50$; $50 \leq x < 60$ Frequency: 14, 16, 14, 16 Estimate the median, to 3 s.f.	
9 Use the product rule to differentiate $y = x^4 \ln x$.	
10 The line $y = 3x + k$ is a tangent to the curve $y = x^2 + x - 4$. Find the value of k.	