Day 24	A Level Maths: C Tier 10-a-day
1 Write $x^2 - 4x + 6$ in the form $(x + p)^2 + q$, and state the coordinates of the minimum point of $y = x^2 - 4x + 6$.	
2 X ~ B(10, 0.7). Find P(X = 5), giving your answer to 3 s.f.	
3 Use the trapezium rule with 3 strips to estimate $\int_0^6 2^x \, dx$, giving your answer to 3 significant figures.	
4 X ~ B(40, p). H_0: p = 0.3, H_1: p > 0.3. Find the critical region for a test at the 1% significance level.	
5 Solve $-4\cos^2 x + 3 = 0$ for $0° \leq x \leq 360°$.	

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6 The circle $(x - 2)^2 + (y - 1)^2 = 5$ passes through P(0, 2). Find the gradient of the tangent to the circle at P.	
7 A rope pulls a box with a force of 16 N at an angle of 60° above the horizontal. Find the horizontal and vertical components of the force, to 3 s.f.	
8 Use a double angle formula to find $\int \cos^2 4x \, dx$.	
9 The line $y = -3x + k$ is a tangent to the curve $y = x^2 - 7x - 1$. Find the value of k.	
10 A car of mass 1200 kg is driven along a straight horizontal road by a driving force of 540 N against a constant resistance of 300 N. Find the acceleration of the car.	