Day 58	A Level Maths: C Tier 10-a-day
1 In a mechanics model, wind is ignored in a model of a falling coin. State what this assumption means for the motion or forces in the model.	
2 A is acute and $\cos A = \frac{24}{25}$. Find the exact values of $\sin 2A$ and $\cos 2A$.	
3 Find the equation of the line parallel to $3x + 2y = -2$ that passes through $(-1, 6)$. Give the answer in the form $y = mx + c$.	
4 A car moves in a straight line with constant acceleration 2 m s^{-2}. Its initial speed is 9 m s^{-1}. Find the distance travelled in 6 s.	
5 $X \sim B(12, p)$. H_0: $p = 0.2$, H_1: $p \neq 0.2$. In a sample, $x = 0$. Test at the 5% significance level.	

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6 Express 8 sin x + 15 cos x in the form R cos(x − α), where R > 0 and 0° < α < 90°. Give α to 1 decimal place.	
7 A is (−4, 4) and B is (0, 12). Find the equation of the perpendicular bisector of AB, in the form ax + by = c with integer a, b and c.	
8 Each customer buys a coffee with probability 0.3. Find the probability that at least one of 10 customers buys a coffee, to 3 s.f.	
9 Solve $\sin x = \frac{\sqrt{2}}{2}$ for $0 \leq x \leq 2\pi$. Give your answers in terms of π.	
10 The diagram shows the graph of $y = \frac{k}{x - a} + c$ with its asymptotes. Find the values of a, c and k. 	