Day 289	A Level Maths: C Tier 10-a-day
1 P(A) = 0.8, P(B) = 0.8 and P(A ∩ B) = 0.64. (a) Find P(A | B). (b) Are A and B independent? Give a reason.	
2 Solve $\sin x = \frac{\sqrt{2}}{2}$ for $0° \leq x \leq 360°$.	
3 f(x) = 2x + 6 and $g(x) = x^2 - 1$. Find (a) fg(x), (b) gf(x).	
4 A cyclist moving in a straight line increases its speed from 1 m s^{-1} to 11.5 m s^{-1} with constant acceleration 1.5 m s^{-2}. Find the time taken.	
5 Sketch $y = 5^x - 25$. Write down the equation of the asymptote and the coordinates where the curve meets the axes.	

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6 $x = 4t^2 + 3$, $y = 3t^3 - t$. Find dy/dx in terms of t, and its value when t = 1.	
7 A particle moves in a straight line with constant acceleration. Its speed increases from 1 m s^{-1} to 5 m s^{-1} as it travels 24 m. Find the acceleration.	
8 Solve $3 \ln x = 4$. Give your answer to 3 significant figures.	
9 A bag has 5 red and 2 blue sweets. Two are taken at random without replacement. Find the probability that at least one of them is red.	
10 The line $y = 3x + k$ is a tangent to the curve $y = x^2 + x - 1$. Find the value of k.	