Day 32	A Level Maths: C Tier 10-a-day
1 P(A ∩ B) = 0.12 and P(B) = 0.3. Find P(A | B).	
2 A cyclist travelling at 30 m s^{-1} brakes uniformly and comes to rest after travelling 90 m. (a) Find the deceleration. (b) Find the time taken to stop.	
3 A geometric sequence begins 2, 6, 18, ... Find the common ratio and the 5th term.	
4 Differentiate y = cot 4x with respect to x.	
5 Write $3x^2 + 18x + 32$ in the form $a(x + p)^2 + q$.	

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6 $X \sim B(100, p)$ and $E(X) = 30$. Find p and Var(X).	
7 Evaluate $\sum_{r=1}^{10} (-2r + 3)$.	
8 Express $\frac{x + 4}{(x + 2)(x + 1)}$ in the form $\frac{A}{x + 2} + \frac{B}{x + 1}$. Find the values of A and B.	
9 A particle moves in a straight line. Its velocity at time t seconds ($0 \leq t \leq 6$) is $v = (-4t^2 + 24t)$ m s^{-1}. Find the maximum velocity and the time at which it occurs.	
10 Solve $-\cos^2 x - \sin x + 1 = 0$ for $0° \leq x \leq 360°$.	