Day 51	A Level Maths: C Tier 10-a-day
1 A circle has equation $(x + 3)^2 + (y - 1)^2 = 64$. Determine whether the point P(7, 8) is inside, outside or on the circle.	
2 $f(x) = x^2 - 2$. Use the Newton-Raphson method with $x_0 = 3$ to find x_1 and x_2, giving your answer to 3 decimal places.	
3 The probability that a seed grows is 0.5. 20 seeds are planted. X is the number that grow. Find P(X = 10), giving your answer to 3 s.f.	
4 Prove that the sum of five consecutive integers is a multiple of 5.	
5 A is acute and $\sin A = \frac{24}{25}$. Find the exact values of sin 2A and cos 2A.	

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6 A train starts from rest and moves in a straight line with constant acceleration 4 m s^{-2}. It travels 18 m. Find the time taken.	
7 X ~ B(150, 0.3). Use a normal approximation to find P(X ≤ 51), to 3 s.f.	
8 The line $y = 4x + k$ is a tangent to the curve $y = x^2 + 8x - 4$. Find the value of k.	
9 A car of mass 1200 kg is driven along a straight horizontal road by a driving force of 1600 N against a constant resistance of 400 N. Find the acceleration of the car.	
10 Solve $\log_x 27 = 3$.	