Day 117	A Level Maths: C Tier 10-a-day
1 Solve $\sin x = -0.65$ for $0° \leq x \leq 360°$. Give your answers to 1 decimal place.	
2 A bag has 4 red and 5 blue sweets. Two are taken at random without replacement. Find the probability that they are different colours.	
3 Two cyclists start at the same time from points X and Y, 300 m apart, and cycle directly towards each other at constant speeds of 11 m s^{-1} and 9 m s^{-1}. Find the time until they meet.	
4 A circle has equation $x^2 + (y + 5)^2 = 8$. Write down the centre and the radius of the circle.	
5 Seeds are planted one at a time until one grows, with probability 0.5 each time. X is the number planted. Find P(X = 6), to 3 s.f.	

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6 (a) Show that $x^3 - 3x - 3 = 0$ can be rearranged to $x = (3x + 3)^{\frac{1}{3}}$. (b) Use x_{n+1} = this formula with $x_0 = 2$ to find x_1, x_2 to 3 d.p.	
7 Sketch $y = 2 \times 5^x - 50$. Write down the equation of the asymptote and the coordinates where the curve meets the axes.	
8 A is acute and $\sin A = \frac{7}{25}$. Find the exact values of sin 2A and cos 2A.	
9 A geometric series has first term 19 and common ratio $\frac{1}{5}$. Find the sum to infinity.	
10 A uniform rod AB of mass 4 kg and length 5 m is supported by a pivot 0.5 m from A. A particle of mass m kg is attached at A and the rod rests horizontally in equilibrium. Find m.	