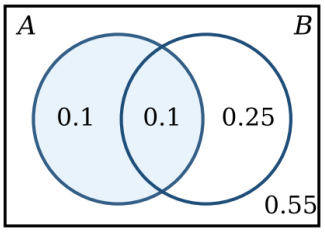
Day 169 **A Level Maths: C Tier 10-a-day**

1 Evaluate $125^{\frac{1}{3}}$.

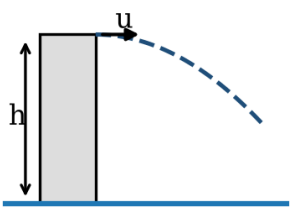
2 A particle P moves in a straight line. Its displacement from O at time t seconds is s metres, where $s = 2t^3 + t^2 + 2t$.
Find its velocity when $t = 2$.

3 The Venn diagram shows probabilities for events A and B.
Find P(A | B).



4 θ is acute and $\sin\theta = \frac{8}{17}$.
Find the exact values of $\cos\theta$ and $\tan\theta$.

5 A ball is thrown horizontally at 13 m s^{-1} from the top of a vertical cliff of height 4.9 m above the sea. Take $g = 9.8$ m s^{-2}. Find (a) the time taken to reach the sea, (b) the horizontal distance of the landing point from the cliff.



Day 169	A Level Maths: C Tier 10-a-day
6 $f(x) = \ln x + x - 4$. Use the Newton-Raphson method with $x_0 = 3$ to find x_1 and x_2, giving your answer to 3 decimal places.	
7 Find the set of values of k for which $2x^2 - 6x + k = 0$ has no real roots.	
8 The probability that a machine is set up wrongly is 0.3. If so, the probability that an item is faulty is 0.9; otherwise it is 0.5. Given that an item is faulty, find the probability that a machine is set up wrongly.	
9 Solve $\sin(x - 40°) = -\frac{\sqrt{2}}{2}$ for $0° \leq x \leq 360°$.	
10 Evaluate $\sum_{r=1}^{11} (-r - 4)$.	