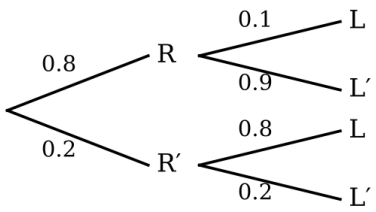
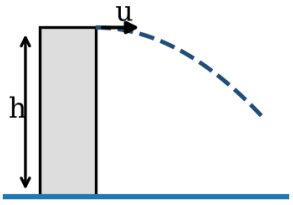
Day 83	A Level Maths: C Tier 10-a-day
1 A is (0, −3) and B is (−6, −9). Find (a) the midpoint of AB, (b) the length of AB, as a surd in simplest form.	
2 A car decelerates uniformly from 24 m s^{-1} to rest in 8 s. Find (a) the deceleration, (b) the distance travelled while decelerating.	
3 A geometric sequence begins 2, −4, 8, ... Find the common ratio and the 5th term.	
4 The tree diagram shows probabilities for events R and L. Find the probability that exactly one of R and L happens.  	
5 Solve 3 sin x = −1 for 0 ≤ x ≤ 2π. Give your answers to 3 significant figures.	

Day 83	A Level Maths: C Tier 10-a-day
6 P(B) = 0.4 and P(A | B) = 0.1. Find P(A ∩ B).	
7 A ball is thrown horizontally at 19 m s^{-1} from the top of a vertical cliff of height 78.4 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.  	
8 Solve $\cos^2 x - \cos x = 0$ for $0° \leq x \leq 360°$.	
9 The line y = x + k is a tangent to the curve $y = x^2 - x - 3$. Find the value of k.	
10 Solve $\sin(x + 45°) = \frac{\sqrt{2}}{2}$ for $0° \leq x \leq 360°$.	