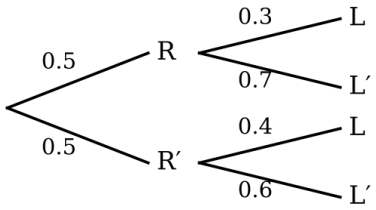
Day 181	A Level Maths: C Tier 10-a-day
1 Find the equation of the line parallel to $3x - 4y = -10$ that passes through $(2, -3)$. Give the answer in the form $y = mx + c$.	
2 A particle moving in a straight line has initial speed 7 m s^{-1} and constant acceleration 1.5 m s^{-2}. Find its speed after 10 s.	
3 Evaluate $4^{-\frac{3}{2}}$.	
4 The number of bacteria is $N = 100\, e^{0.05t}$, where t is the time in hours. Find (a) N when t = 10, (b) the time when N = 200. Give answers to 3 s.f.	
5 8 pairs of data on height and arm span have r = 0.75. Test, at the 5% significance level, for evidence of positive correlation. The critical value is 0.6215.	

Day 181	A Level Maths: C Tier 10-a-day

6 A population of 400 grows by 2% each year. After how many whole years will it first exceed 600?

7 The tree diagram shows probabilities for events R and L.
Find the probability that exactly one of R and L happens.



8 $f(x) = 6 \sin x + 8 \cos x + 5$.
Write f(x) in the form $R \sin(x + \alpha) + 5$, with α in degrees to 1 d.p., and state the maximum value of f(x).

9 The nth term of a sequence is $u_n = 2n + 6$.
Find $\sum_{r=1}^{11} u_r$.

10 A stone is thrown vertically downwards at 3 m s^{-1} from the top of a cliff and hits the sea after 2 s. Taking g = 9.8 m s^{-2}, find the height of the cliff.