

# IGCSE – Tree diagrams – paper 4 – 3

- (b) Find the probability that a car driver
- (i) finds both signals are “GO”, [2]
  - (ii) finds exactly one of the two signals is “GO”, [3]
  - (iii) does not find two “STOP” signals. [2]
- (c) With no stops, Damon completes the 12 kilometre journey at an average speed of 40 kilometres per hour.
- (i) Find the time taken in **minutes** for this journey. [1]
  - (ii) When Damon has to stop at a signal it adds 3 minutes to this journey time.
- Calculate his average speed, in **kilometres per hour**, if he stops at both road signals. [2]
- (d) Elsa takes a different route from Acity to Beetown.  
This route is 15 kilometres and there are no road signals.  
Elsa’s average speed for this journey is 40 kilometres per hour.  
Find
- (i) the time taken in **minutes** for this journey, [1]
  - (ii) the probability that Damon takes more time than this on his 12 kilometre journey. [2]

## Oct 06 Paper 4

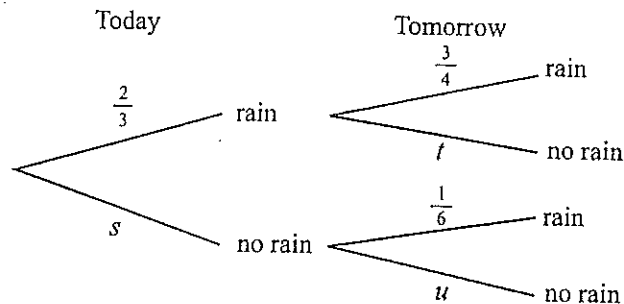
5 Give your answers to this question as fractions.

- (a) The probability that it rains today is  $\frac{2}{3}$ .

If it rains today, the probability that it will rain tomorrow is  $\frac{3}{4}$ .

If it does not rain today, the probability that it will rain tomorrow is  $\frac{1}{6}$ .

The tree diagram below shows this information.



- (i) Write down, as fractions, the values of  $s$ ,  $t$  and  $u$ . [3]
  - (ii) Calculate the probability that it rains on both days. [2]
  - (iii) Calculate the probability that it will not rain tomorrow. [2]
- (b) Each time Christina throws a ball at a target, the probability that she hits the target is  $\frac{1}{3}$ .  
She throws the ball three times.  
Find the probability that she hits the target
- (i) three times, [2]
  - (ii) at least once. [2]
- (c) Each time Eduardo throws a ball at the target, the probability that he hits the target is  $\frac{1}{4}$ .  
He throws the ball until he hits the target.  
Find the probability that he **first** hits the target with his
- (i) 4th throw, [2]
  - (ii)  $n$ th throw. [1]