

11 Sarah rolls a fair 6-sided dice twice.

Find the probability she rolls a number greater than 4 both times.

..... [2]

12 (a) Write down the value of 73^0 .

..... [1]

(b) Find the value of $\frac{7}{3^{-2}}$.

..... [2]

(c) Write 27×81^2 in the form 3^n .

..... [2]

25 Mahir picks one number at random from the numbers 5, 10 and 15. He then picks one number at random from the numbers 4, 5 and 6. He adds the two numbers.

The sample space diagram shows some of the possible outcomes.

		First number		
		5	10	15
Second number	4		14	19
	5		15	20
	6		16	21

(a) Complete the sample space diagram. [1]

(b) Given that the total of the two numbers is odd, find the probability that one of the numbers added is 15.

..... [2]

26 Write as a single fraction in its simplest form.

(a) $\frac{mp}{25y} \times \frac{15}{m}$

..... [2]

(b) $\frac{3}{2x-5} + \frac{4}{x-3}$

4



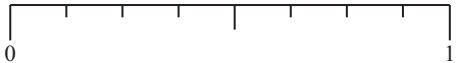
Samira picks one of these cards at random and replaces it.

(a) Find the probability that she picks an odd number.
..... [1]

(b) Samira repeats this 35 times.
Calculate the number of times Samira is expected to pick an odd number.

..... [1]

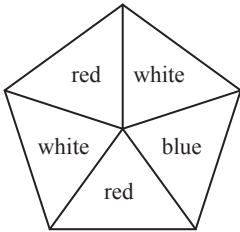
7 A bag contains 8 discs numbered 1 to 8.
A disc is picked at random from the bag.



On the probability scale, draw an arrow (↓) to show the probability that the number is

- (a) an even number, label the arrow A [1]
- (b) 9, label the arrow B [1]
- (c) less than 3, label the arrow C. [1]

5



The diagram shows a fair 5-sided spinner.
The spinner is spun once.

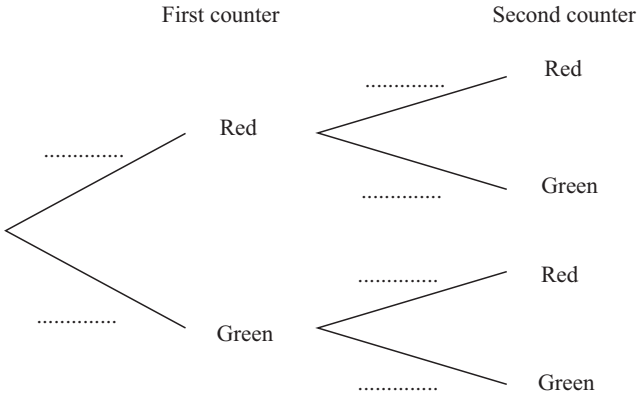
(a) Write down the colour the spinner is least likely to land on.
..... [1]

(b) Find the probability that the spinner lands on white.
..... [1]

(c) Find the probability that the spinner does not land on red.
..... [1]

19 A box contains 10 counters.
The counters are either red or green.
The ratio red counters : green counters = 1 : 4.

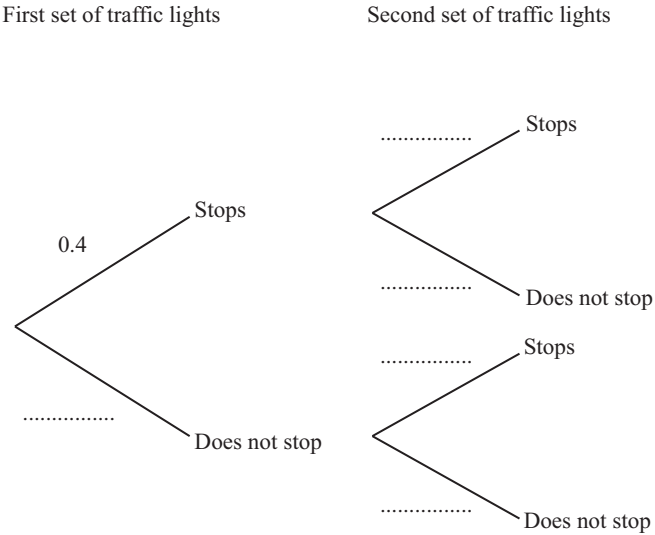
Shareen picks a counter at random, notes its colour and puts it back in the box.
She then picks a second counter at random.



- (a) Complete the tree diagram.
- [3]
- (b) Find the probability that both counters are green.

..... [2]

26 There are 2 sets of traffic lights on Li's journey to work.
The probability he stops at the first set of traffic lights is 0.4 .
The probability he stops at the second set of traffic lights is 0.7 .



- (a) Complete the tree diagram.
- (b) Work out the probability that Li does not stop at both sets of traffic lights.

..... [2]

Question 27 is printed on the next page.