

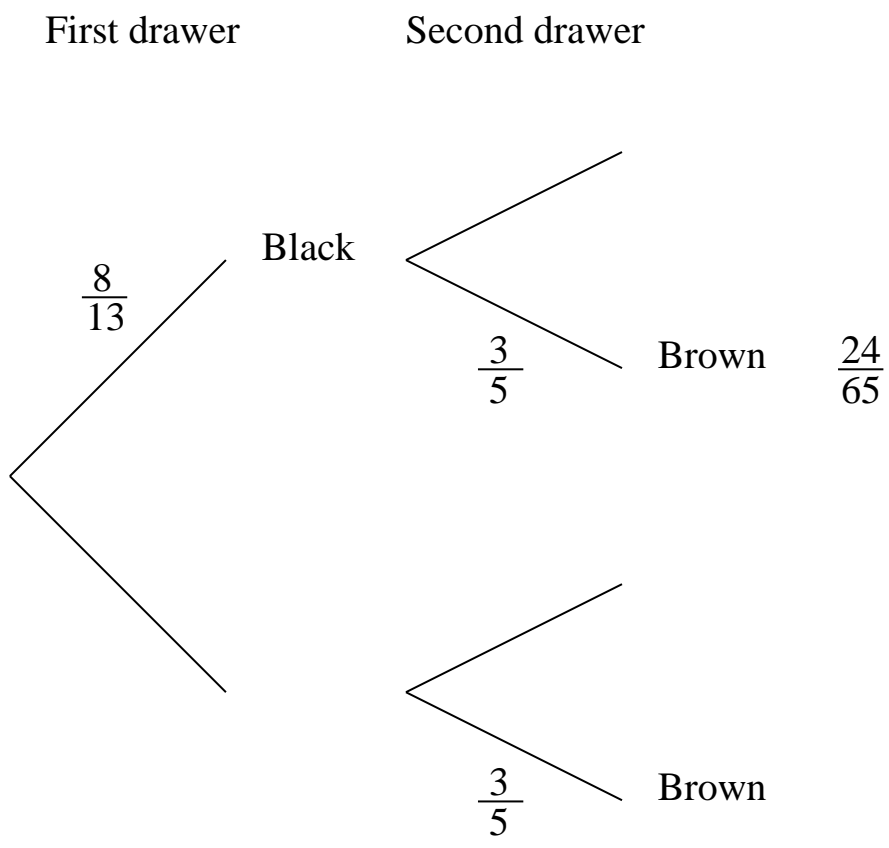
8.1 An Introduction to Tree Diagrams

Example

One drawer contains 8 black socks and 5 brown socks.
A second drawer contains 2 white socks and 3 brown socks.

A sock is chosen at random from each drawer.

(i) Complete the tree diagram



(ii) What is the probability of getting a black sock and a white sock ?

(iii) What is the probability that both socks are the same colour ?

8.2 Exercise

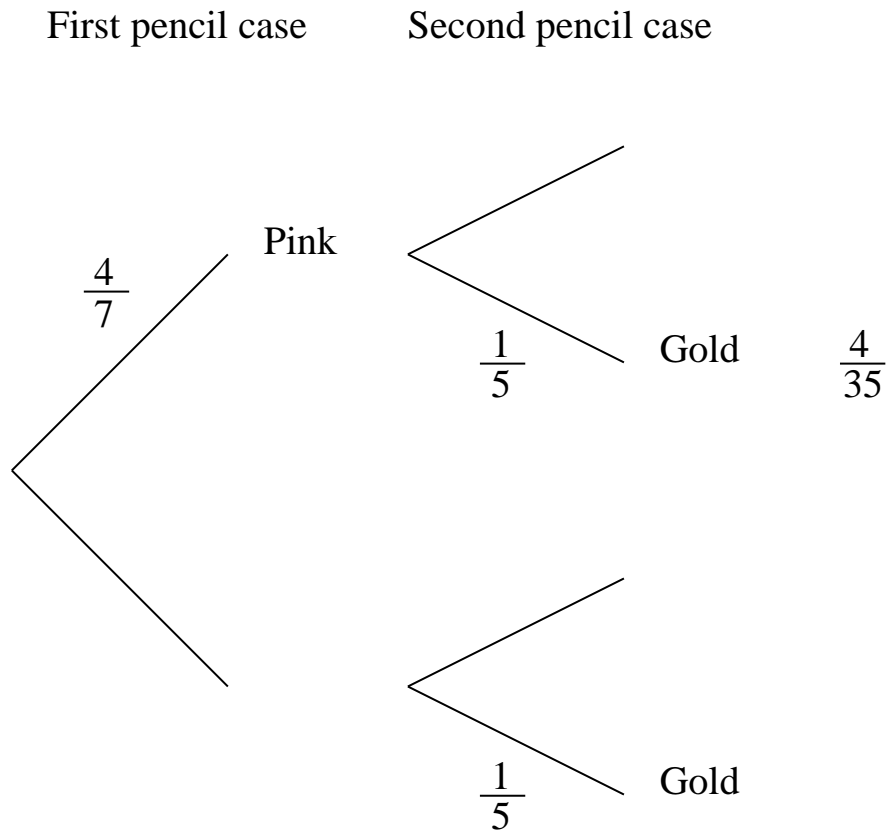
Question 1

One pencil case contains 4 pink pencils and 3 blue pencils.

A second pencil case contains 1 gold pencil and 4 blue pencils.

A pencil is chosen at random from each pencil case.

- (i) Complete the tree diagram



- (ii) What is the probability of getting a pink pencil and a gold pencil ?

- (iii) What is the probability that both pencils are the same colour ?

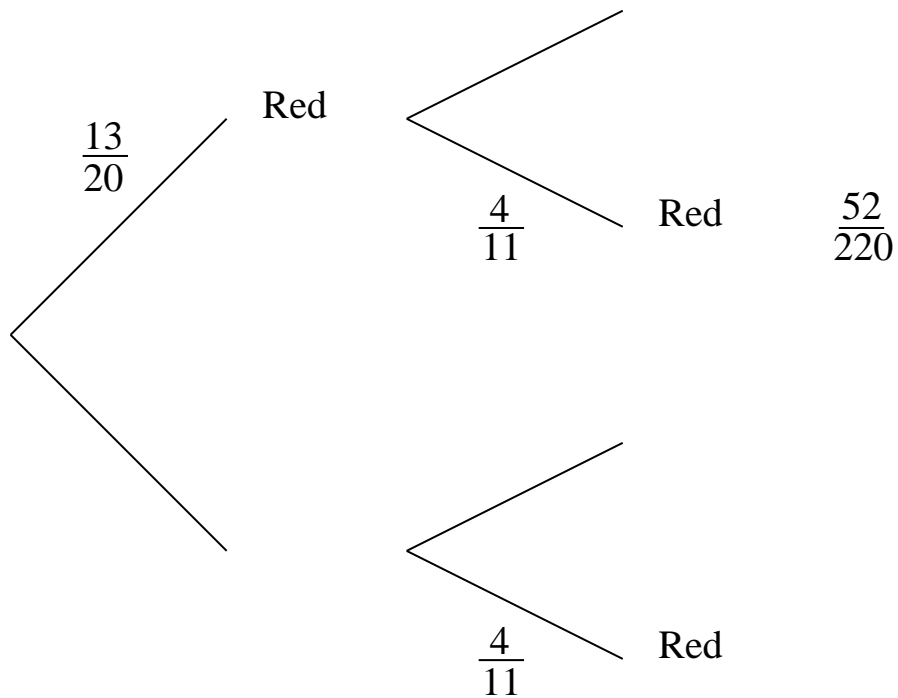
Question 2

One bag of sweets contains 13 red boiled sweets and 7 green boiled sweets.
A second bag of sweets contains 7 blue boiled sweets and 4 red boiled sweets.

A sweet is chosen at random from each bag.

- (i) Complete the tree diagram

First bag of sweets Second bag of sweets



- (ii) What is the probability of getting a green sweet and a blue sweet ?

- (iii) What is the probability of **NOT** getting two red sweets ?

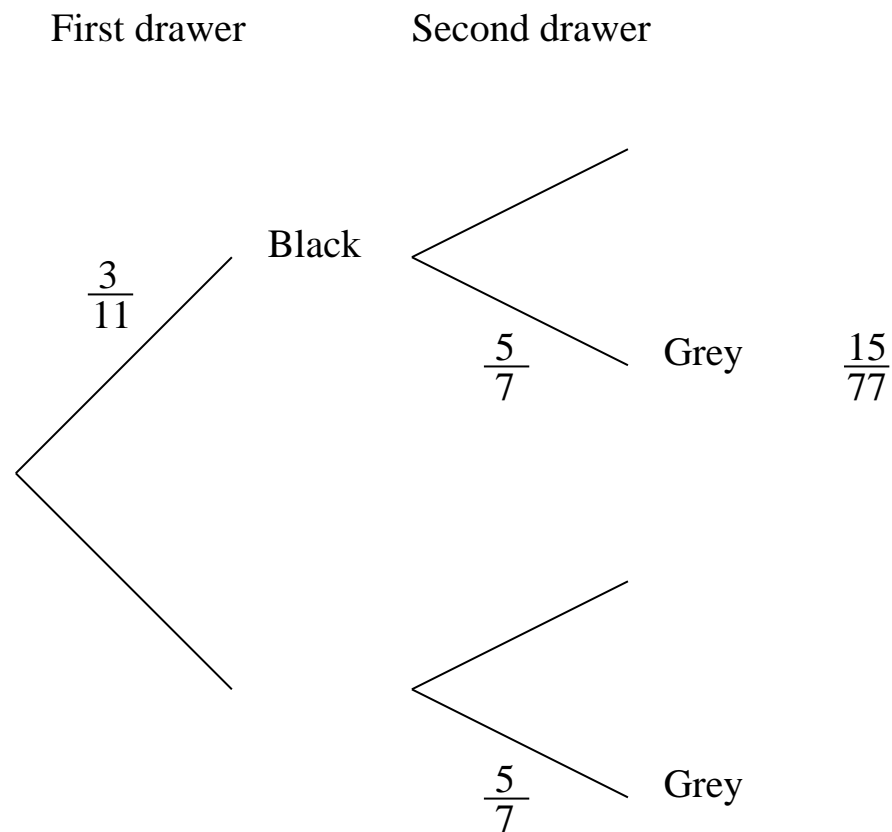
Question 3

One drawer contains 3 black socks and 8 grey socks.

A second drawer contains 2 black socks and 5 grey socks.

A sock is chosen at random from each drawer.

- (i) Complete the tree diagram



- (ii) What is the probability of getting two black socks ?
- (iii) What is the probability that both socks are the same colour ?
- (iv) What is the probability of the pair not being of a matching colour ?

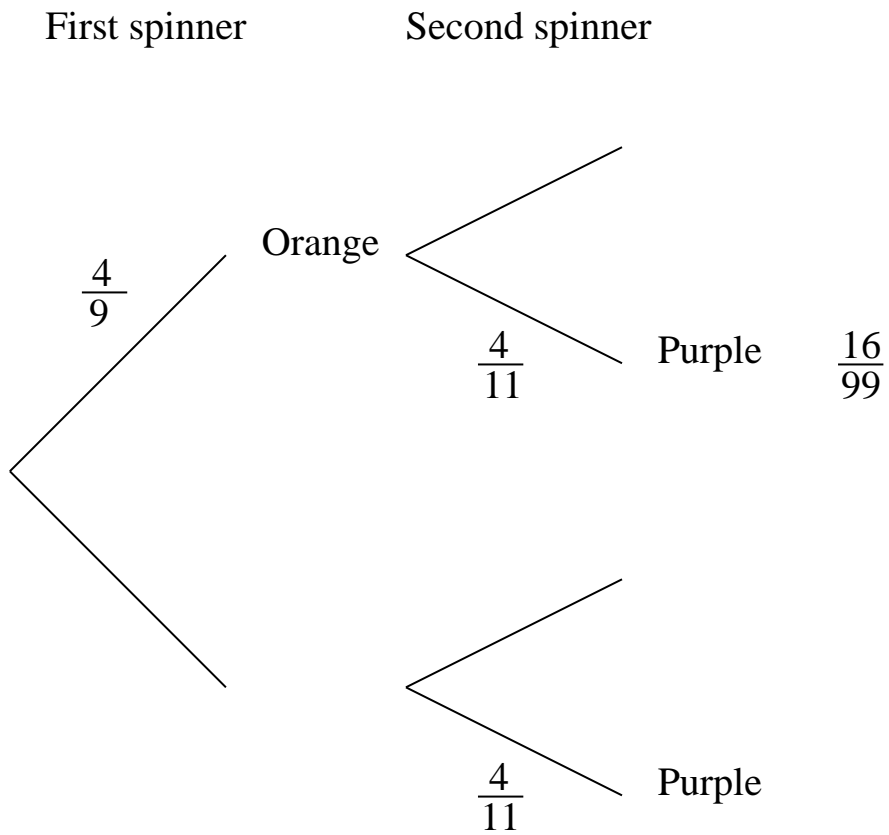
Question 4

One spinner has 4 orange sectors and 5 purple sectors all of equal size.

A second spinner has 7 orange sectors and 4 purple sectors all of equal size.

Each is spun once.

- (i) Complete the tree diagram



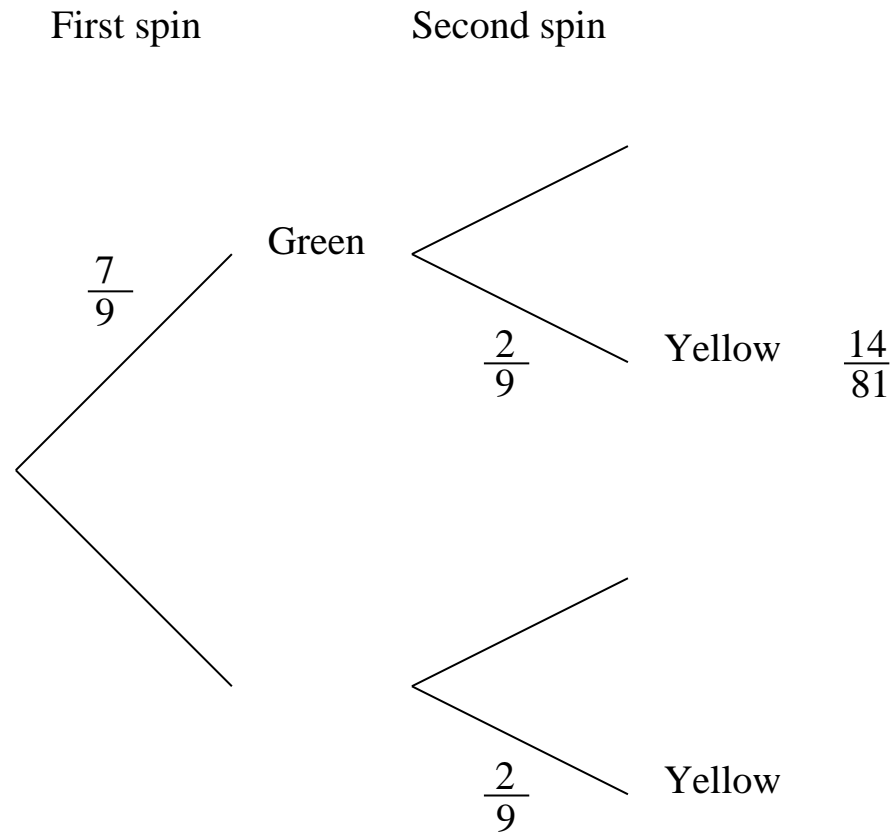
- (ii) What is the probability of spinning two orange sectors ?
- (iii) What is the probability that both spinners spin the same colour ?
- (iv) What is the probability of the spinners not being of a matching colour ?

Question 5

A spinner has 7 green sectors and 2 yellow sectors, all of equal size.

It is spun twice.

- (i) Complete the tree diagram



- (ii) What is the probability that both spins are green ?
- (iii) What is the probability that both spins are the same colour ?
- (iv) What is the probability of the two spins not being of a matching colour ?

Question 6

A spinner has 5 indigo sectors and 6 puce sectors, all of equal size.

It is spun twice.

(i) Draw a tree diagram of a similar style to those of previous questions.

(ii) What is the probability that both spins are indigo ?

(iii) What is the probability that both spins are the same colour ?

(iv) What is the probability of the two spins not being of a matching colour ?

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Teachers may obtain detailed worked solutions to the exercises by email from mhh@shrewsbury.org.uk