

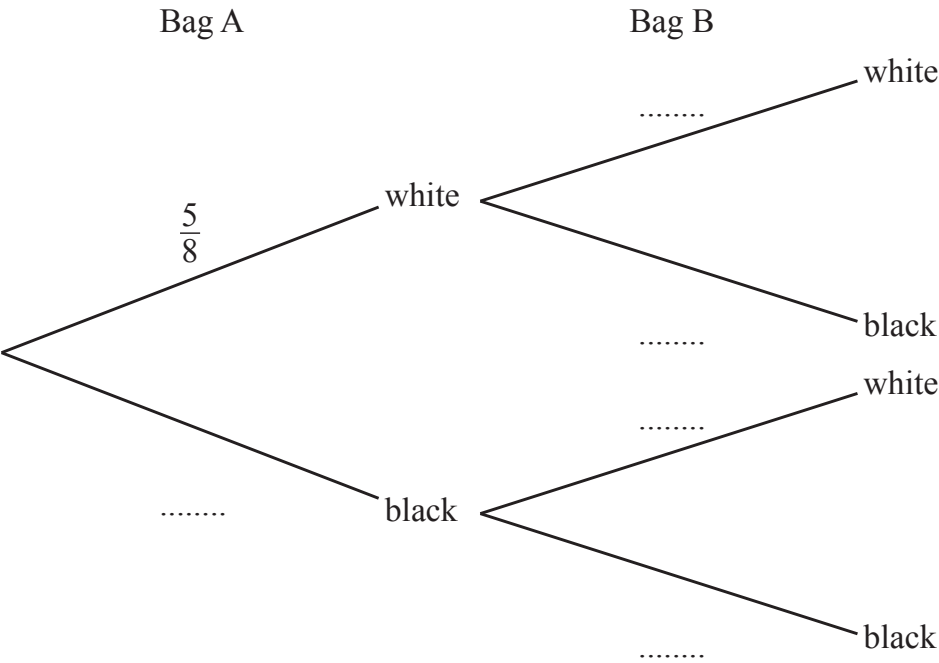
Bag A contains 5 white balls and 3 black balls.
Bag B contains 3 white balls and 1 black ball.

- (a) Two balls are picked at random from bag B without replacement.
- Find the probability that both balls are black.

..... [1]

- (b) The balls are replaced into bag B.
Kyle picks a ball at random from each bag.

- (i) Complete the tree diagram.



[2]

- (ii) Find the probability that the two balls are the same colour.

- (c) The balls are replaced into their bags.
Jo picks a ball at random from bag A and places it into bag B.
She then picks a ball at random from bag B.

Find the probability that she picks a black ball from bag B.

..... [3]

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]

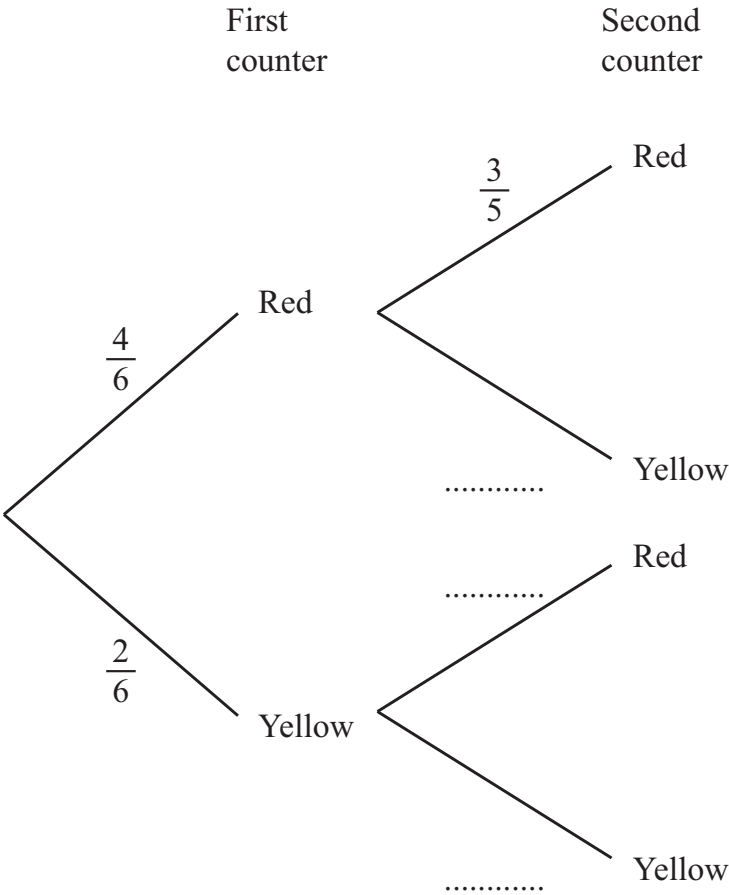
17 (a) A bag contains 6 red marbles, 3 green marbles and 1 blue marble.
Two marbles are picked at random from the bag **with replacement**.

Find the probability that both marbles are green.

..... [2]

(b) Another bag contains 4 red counters and 2 yellow counters.
Two counters are picked at random from this bag **without replacement**.

(i) Complete the tree diagram.



[2]

(ii) Find the probability that one of the two counters is yellow.