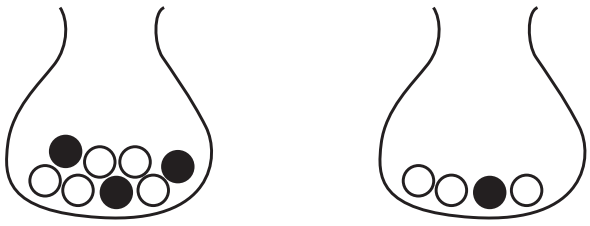
**20**



Bag A



Bag B

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

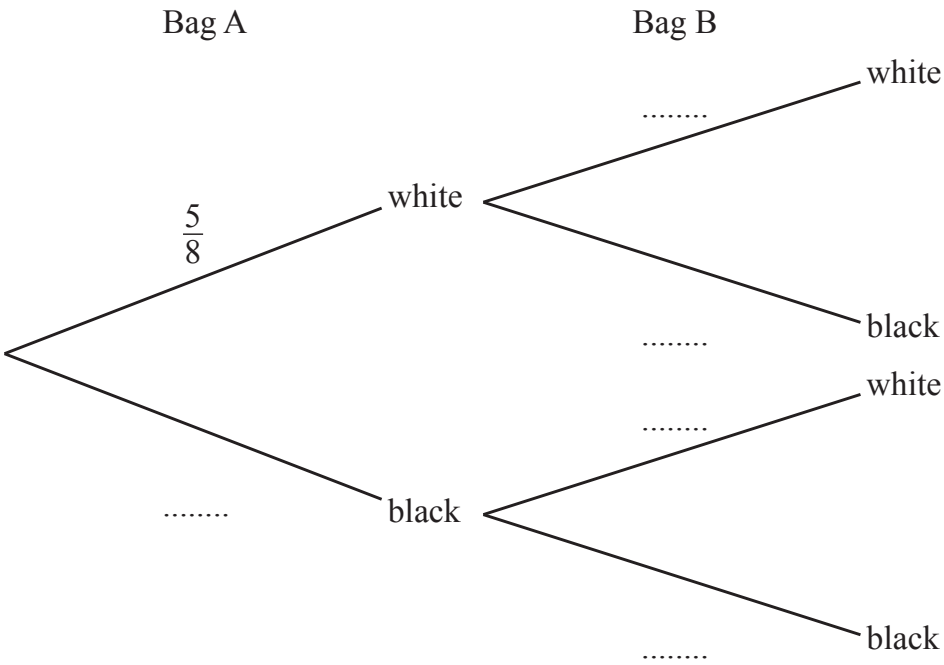
**(a)** Two balls are picked at random from bag B without replacement.

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.

..... [3]

**(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]