

Harder Tree Diagrams

- 1) There are 5 red pens, 3 blue pens and 2 green pens in a box.
Jerry takes at random a pen from the box and gives the pen to his friend.
Jerry then takes at random another pen from the box.
Work out the probability that both pens are the same colour.



- 2) There are 3 red sweets, 2 blue sweets and 4 green sweets in a bag.
Jack takes a sweet at random.
He eats the sweet.
He then takes another sweet at random.

Work out the probability that both sweets are the same colour.



- 3) There are 13 buttons in a bag.
9 buttons are white.
4 buttons are black.
Carol takes a button at random from the bag, and keeps it.
She now takes another button from the bag.

Work out the probability that Carol takes a button of each colour.

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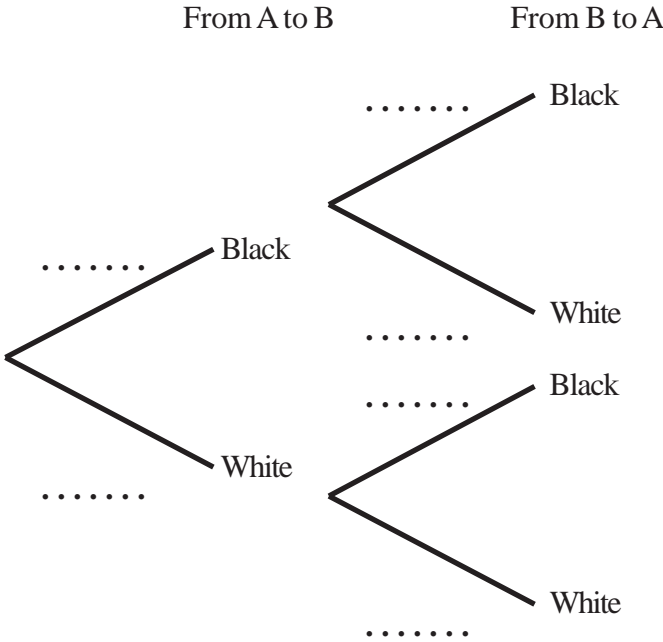
- 1) A bag contains 7 green and 3 yellow balls.
A ball is taken from the bag at random and not replaced.
Another ball is taken from the bag at random.
- Draw a tree diagram to show all the possibilities.
 - What is the probability that both balls are different colours?
- 2) A box contains 5 red counters and 3 blue counters.
A counter is taken from the box at random and not replaced.
Another counter is taken at random.
- Draw a tree diagram to show all the possibilities.
 - What is the probability of choosing at least one blue counter?
 - What is the probability of choosing two counters of the same colour?
 - What is the probability of choosing two counters of different colours?
- 3) A box contains 4 red counters and 3 blue counters.
A counter is taken from the box at random and not replaced.
A second counter is taken from the box at random and not replaced.
A third counter is taken from the box.
- Draw a tree diagram to show all the possibilities.
 - What is the probability that all three counters are the same colour?
 - What is the probability that exactly two of the counters are red?

Harder Tree Diagrams

- 1) Sara has two boxes.
 There are 6 black and 4 white counters in box A.
 There are 7 black and 3 white counters in box B.

Sara takes at random a counter from box A and puts it in box B.
 She then takes at random a counter from box B and puts it in box A.

- a) Complete the probability tree diagram.



- b) Find the probability that after Sara has put the counters from box B into box A there will still be 6 black counters and 4 white counters in box A.