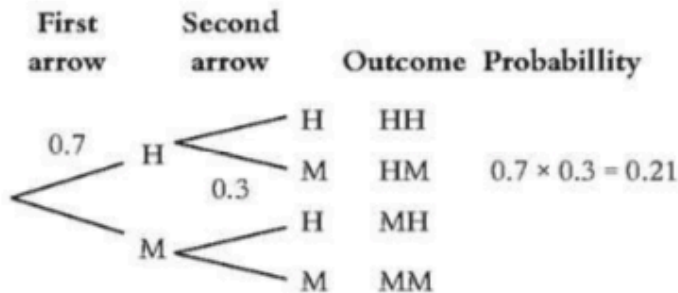


Maths HL15 Core – Independent Probability Tree Diagrams

1 The probability that an archer hits a target when he shoots an arrow is 0.7. The archer shoots two arrows at a target.



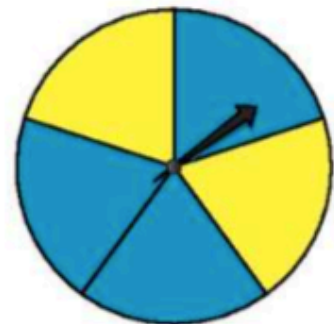
a Copy and complete the tree diagram.
(H means he hits the target and M means he misses the target.)



b Find the probability that

- both arrows hit the target,
- neither arrow hits the target,
- only one arrow hits the target,
- at least one arrow hits the target.

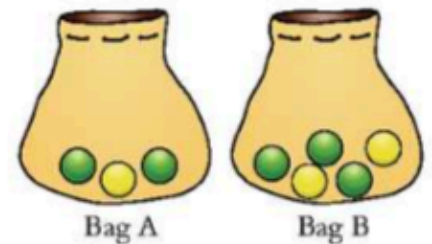
2 The circular board is divided into five coloured sections. When the spinner is spun it is equally likely to stop in any of the five sections. The spinner is spun twice. Draw a tree diagram to show all the possible outcomes.



Find the probability that

- both colours are blue,
- both colours are yellow,
- the first colour is blue and the second is yellow.

3 Bag A contains 2 green marbles and 1 yellow marble. Bag B contains 3 green marbles and 2 yellow marbles. One marble from each bag is selected at random. Draw a tree diagram to show all the possible outcomes.



Find the probability of selecting

- two greens,
- two yellows,
- one of each colour.

4 The probability that an egg on a production line is cracked is 0.01. Two eggs are selected at random from the production line. Find the probability that,



- both eggs are cracked,
- neither egg is cracked,
- exactly one of the eggs is cracked,
- at least one egg is cracked.