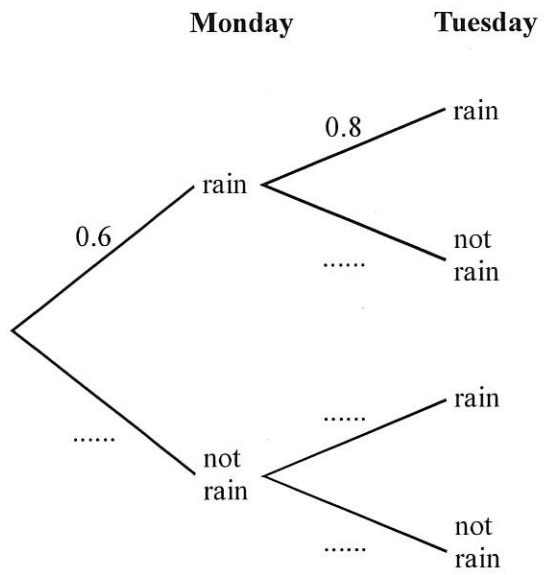
1. A weather forecast says

The probability that it will rain on Monday is 0.6
The probability that it will rain on Tuesday is 0.8

(a) Complete the tree diagram showing the possible outcomes



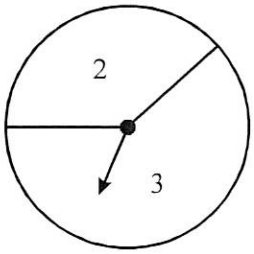
(1)

(b) Calculate the probability that it rains on just one of the two days.

Answer .....

(3)
(Total 4 marks)

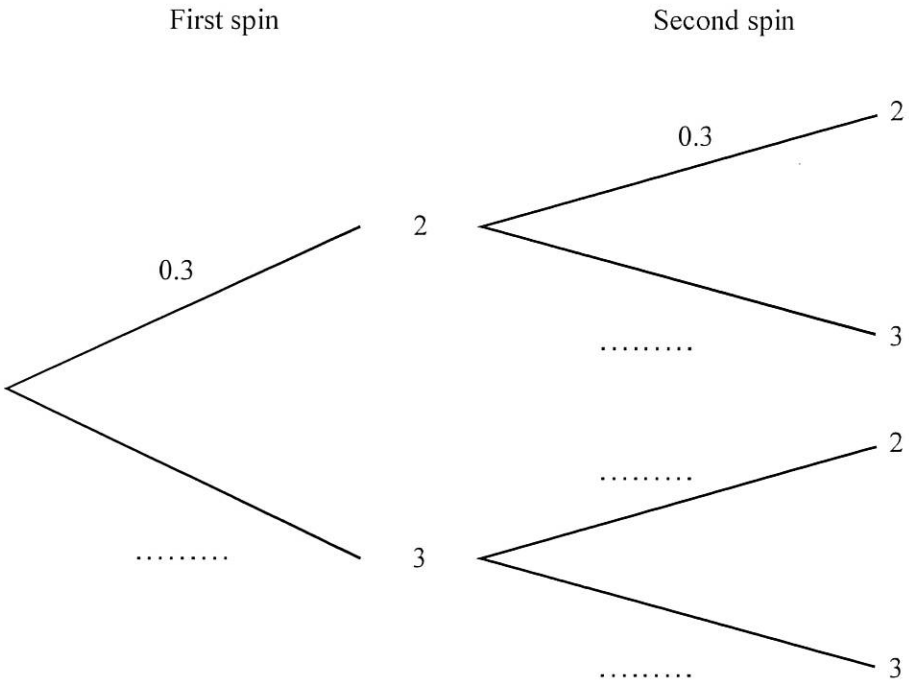
2. The diagram shows a spinner.



When the arrow is spun the probability of scoring 2 is 0.3

The arrow is spun twice and the scores are added.

(a) Complete the tree diagram.



(1)

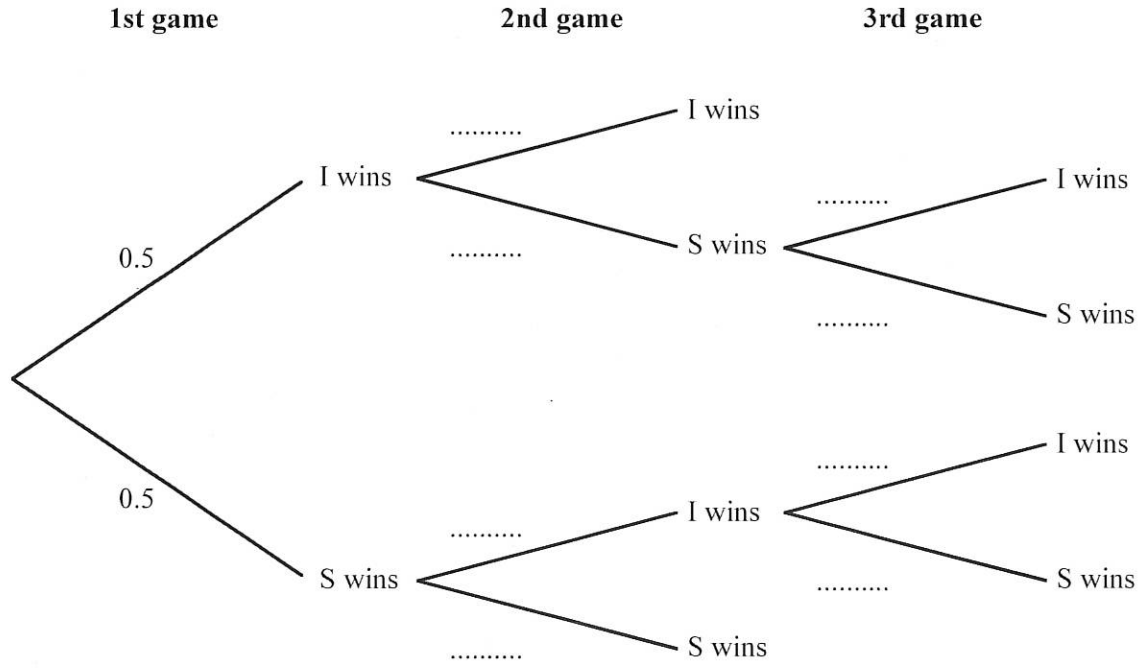
(b) What is the probability that the total score is 4?

Answer .....

(2)
(Total 3 marks)

The match consists of three games.
The winner of the match is the first player to win two games.

The tree diagram shows all the possible outcomes.
'I wins' means that Ian wins the game.
'S wins' means that Simon wins the game.



The probability that Ian wins the first game is 0.5
Whenever Ian wins a game the probability that he wins the next game is 0.7
Whenever Simon wins a game the probability that he wins the next game is 0.6

(a) Complete the tree diagram.

(2)

(b) Calculate the probability that Ian wins the darts match.

Answer .....

(4)
(Total 6 marks)

4. A bag of sweets contains 5 toffees, 3 chocolates and 2 mints.

Emmie and Sophie each pick one sweet at random.

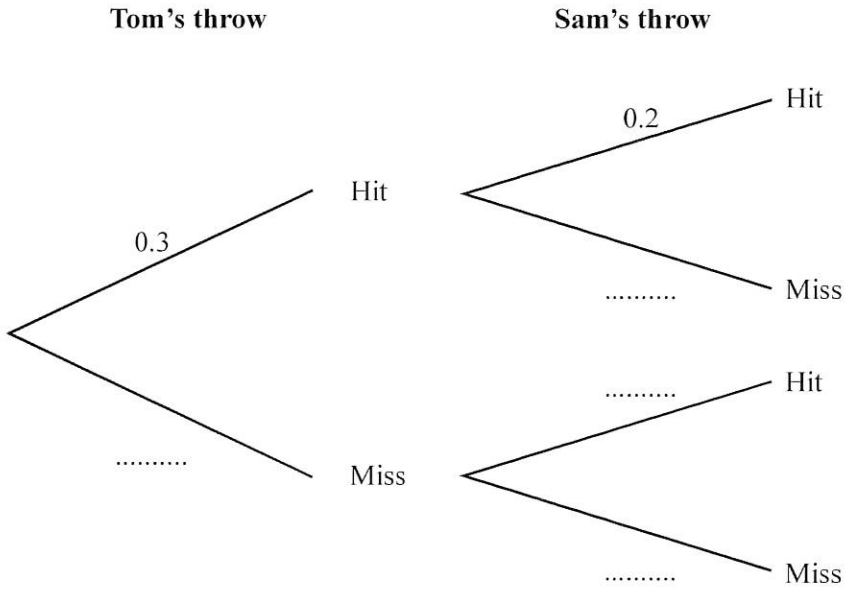
What is the probability that they pick sweets of the same kind?

Answer .....

(Total 4 marks)

5. Tom and Sam take turns to throw a dart at a target.
The probability that Tom hits the target is 0.3
The probability that Sam hits the target is 0.2

(a) Complete the tree diagram.



(1)

(b) What is the probability that Tom and Sam both hit the target?

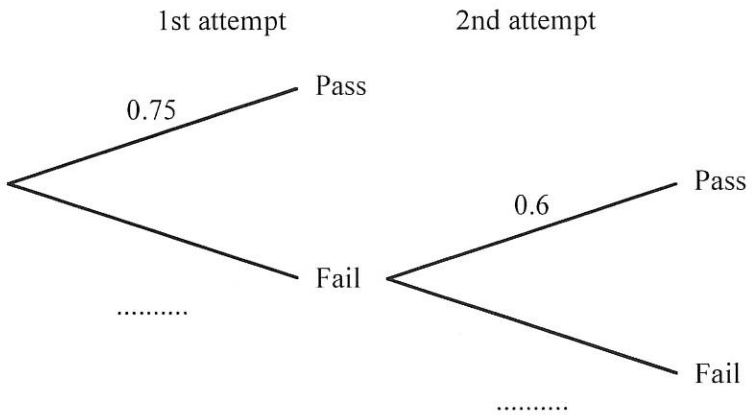
Answer .....

(2)
(Total 3 marks)

6. At the end of a training programme students have to pass an exam to gain a certificate.
The probability of passing the exam at the first attempt is 0.75
Those who fail are allowed to re-sit.
The probability of passing the re-sit is 0.6
No further attempts are allowed.

The tree diagram below shows all the possible outcomes.

(a) (i) Complete the tree diagram.



(1)

(ii) What is the probability that a student fails to gain a certificate?

Answer .....

(2)

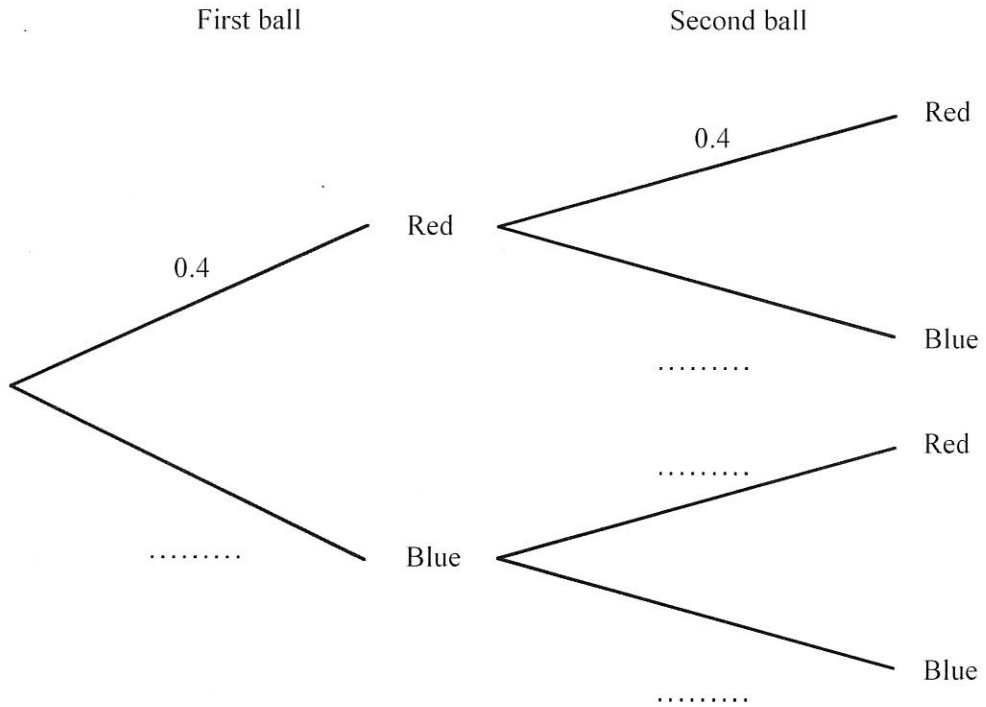
(b) Three students take the exam.
What is the probability that all of them gain a certificate?

Answer .....

(3)
(Total 6 marks)

7. A bag contains 4 red balls and 6 blue balls.
A ball is taken from the bag at random and replaced.
Another ball is then taken from the bag at random.

(a) Complete the tree diagram.



(1)

(b) What is the probability that both balls are the same colour?

Answer.....

(3)
(Total 4 marks)

8. A bucket contains tennis balls which are identical apart from their colour.
There are 5 yellow balls, 3 white balls and 2 green balls in the bucket.

Martina chooses two of the balls at random and without replacement.
What is the probability that the balls are the same colour?

Answer .....

(Total 5 marks)