GCSE Exam Questions on Tree Diagrams

Question 1. (AQA June 2003 Intermediate Paper 1 NO Calculator)

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

First spin   Second spin

            2
      0.3   0.3   2

                    2
           0.3   3

                         2
        3
           3   3

[1 mark]

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

[2 marks]

Question 2. (AQA November 2003 Intermediate Paper 1 NO Calculator)

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

(a) Complete the tree diagram

Tom's throw   Sam's throw

                          0.2   Hit
             Hit
      0.3
                          .... Miss

                          .... Hit
      .... Miss
                          .... Miss

[1 mark]

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

[2 marks]

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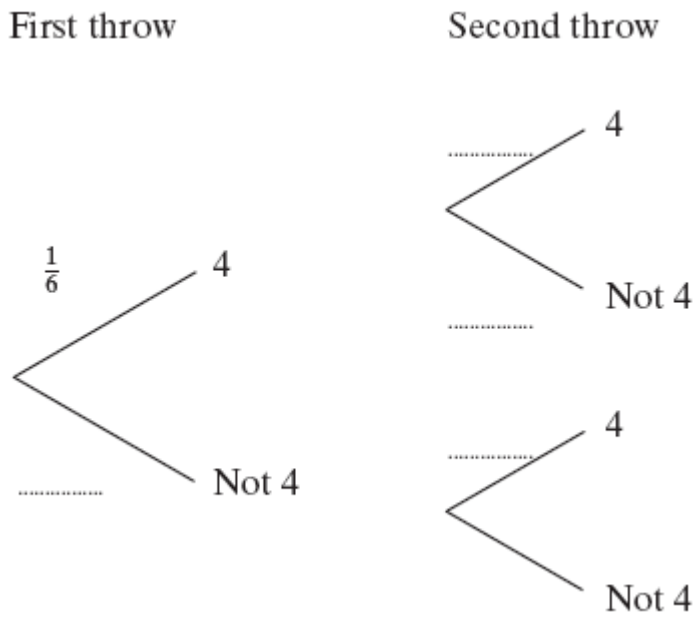Question 3. (AQA June 2004 Intermediate Paper 2 Calculator OK)

An ordinary six-sided dice is biased. The probabilities of the dice landing on each of the numbers are	(a) Work out the value of p.

Number	1	2	3	4	5	6
Probability	p	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{2}{9}$

[2 marks]

The dice is thrown twice.
(b) Complete the tree diagram

First throw   Second throw

$\frac{1}{6}$ 4

....   4

....   Not 4

....   Not 4   4

....

....   Not 4

....

[2 marks]

(c) Calculate the probability that only one 4 is thrown.

[3 marks]

Question 4. (AQA November 2007 Intermediate Paper 2 Calculator OK)

A bag contains 7 green balls and 3 yellow balls. A ball is taken from the bag at random and is then replaced. Another ball is then taken from the bag at random.

(a) Complete the tree diagram

First ball   Second ball

0.7   Green

0.7   Green

....   Yellow

....   Green

....   Yellow

Yellow

....   Yellow
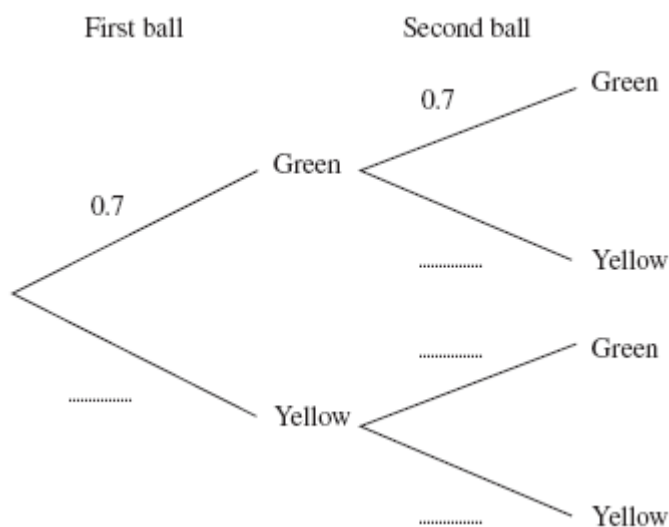
[1 mark]

(b) What is the probability that the balls are different colours?
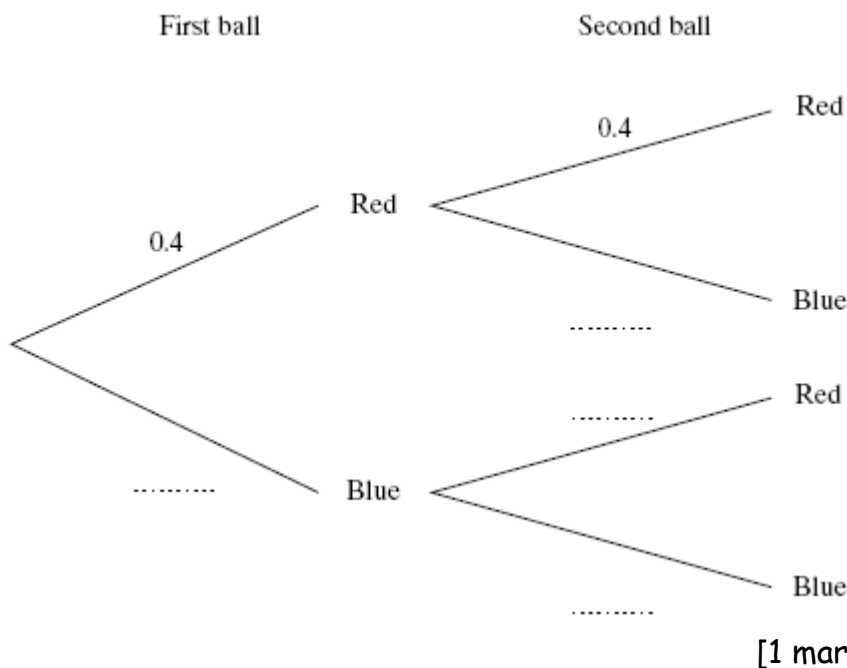
[3 marks]

GCSE Exam Questions on Tree Diagrams

Question 5. (AQA November 2004 Intermediate Paper 2 Calculator OK)

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

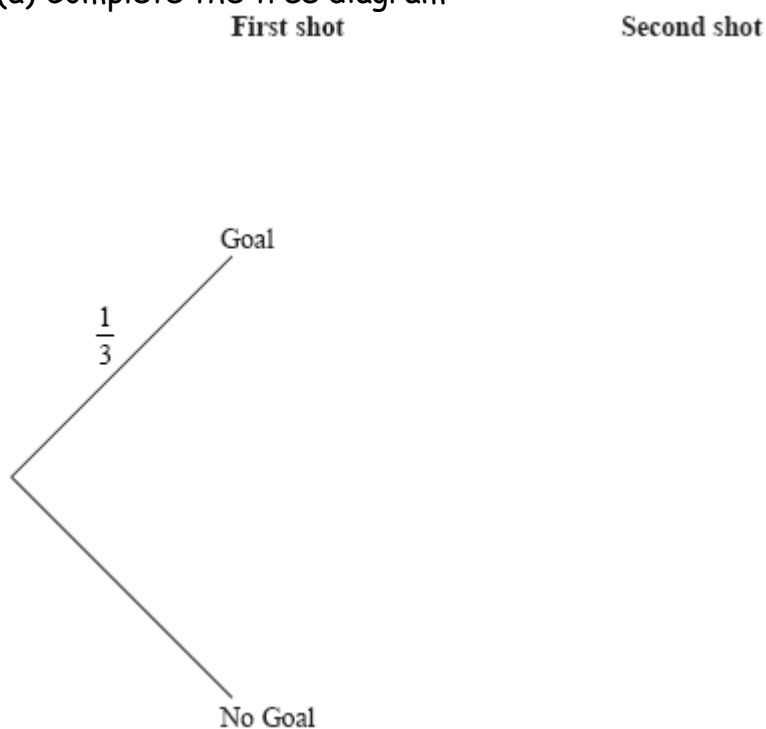| (a) Complete the tree diagram	(b) What is the probability that both balls are the same colour?

First ball   Second ball

$$0.4$$ Red
Red
$$0.4$$
                              Blue
                  ....

                              Red
                  ....
....   Blue

                              Blue
                  ....

[1 mark]

(b) [3 marks]

Question 6. (Edexcel iGCSE June 2008 Higher Paper 2 Calculator OK)

Each time Astrid takes a shot at goal, the probability that she will score is $\frac{1}{3}$.

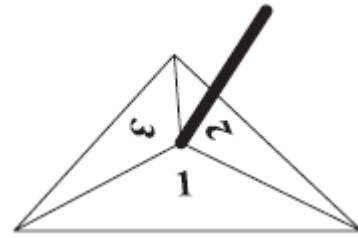Astrid takes two shots at goal.

(a) Complete the tree diagram	(b) Calculate the probability that Astrid scores at least one goal.

First shot   Second shot

Goal
$\frac{1}{3}$

No Goal

[3 marks]

(b) [3 marks]

GCSE Exam Questions on Tree Diagrams

Question 7. (Edexcel iGCSE June 2004 Higher Paper 2 Calculator OK)

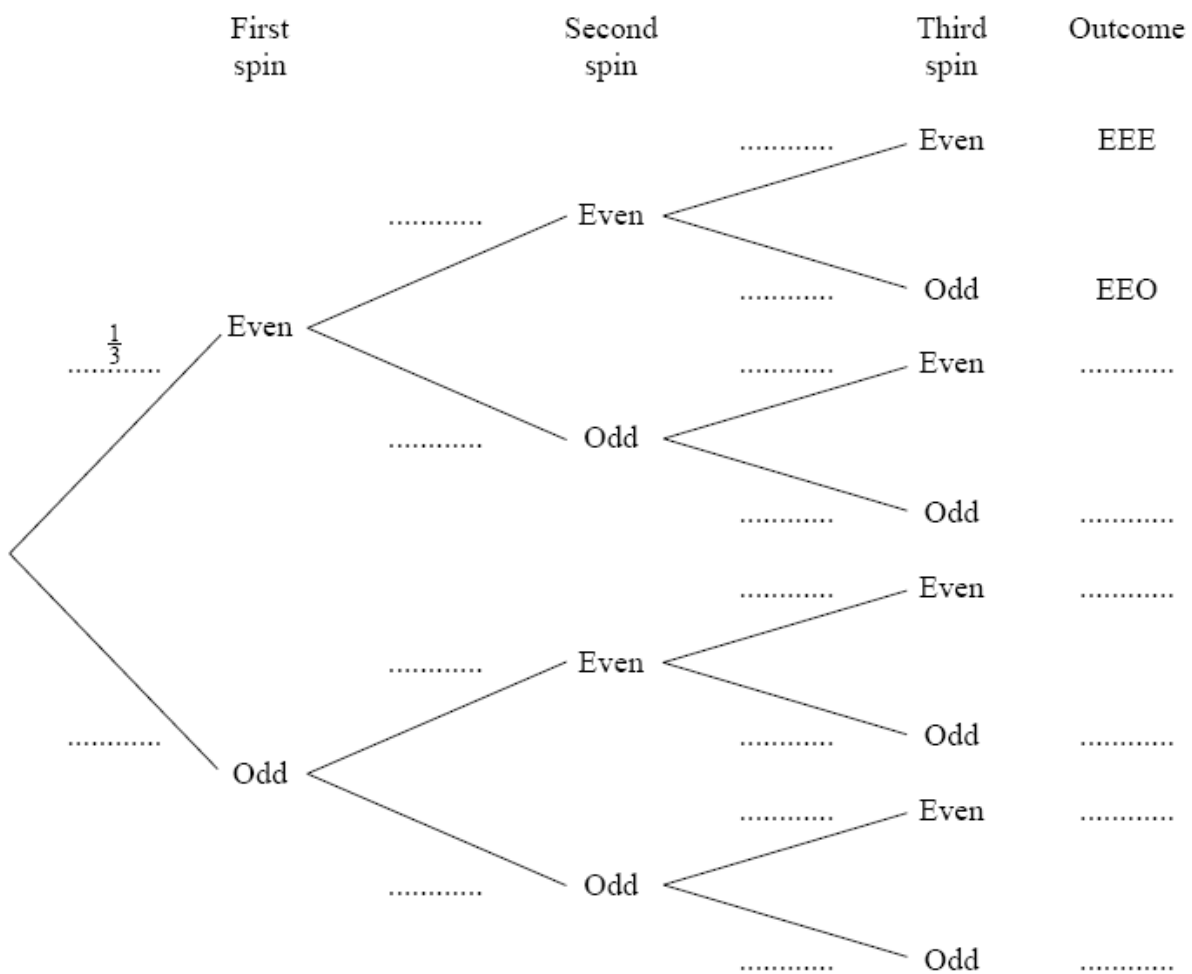|	
Here is a fair 3-sided spinner. Its sides are labelled 1, 2 and 3 as shown in the diagram. (a) Aisha is going to spin the spinner twice. What is the probability that it will land on 1 both times? [2 marks]	

Harry is going to spin the spinner 3 times.
(b) Complete the tree diagram

First spin   Second spin   Third spin   Outcome

.... Even   EEE

.... Even

.... Odd   EEO

$\frac{1}{3}$ .... Even

.... Even

.... Odd ....

.... Odd ....

.... Even ....

.... Even

.... Odd ....

.... Odd ....

.... Even ....

.... Odd

.... Odd ....

[4 marks]

(c) Work out the probability that the spinner will land on an odd number 3 times. [2 marks]	(d) Work out the probability that the spinner will land on an even number exactly once. [3 marks]

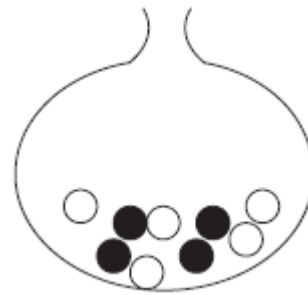GCSE Exam Questions on Tree Diagrams

Question 8. (Edexcel iGCSE November 2004 Higher Paper 1 Calculator OK)

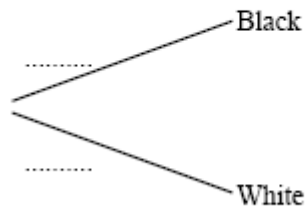| A bag contains 4 black discs and 5 white discs. Ranjit takes a dis at random from the bag and notes its colour. He then replaces the disc in the bag. Ranjit takes another disc at random from the bag and notes its colour.	

(b) Complete the tree diagram to show all the possibilities

First disc   Second disc

.... Black

.... White

[4 marks]

(b) Calculate the probability that Ranjit takes two discs of different colours.

[3 marks]