

# D5

## Data exam review

1 The diagram shows six counters.



Each counter has a letter on it.

Bishen puts the six counters into a bag.

He takes a counter at random from the bag.

He records the letter which is on the counter and replaces the counter in the bag.

He then takes a second counter at random and records the letter which is on the counter.

**a** Calculate the probability that the first letter will be A and the second letter will be N.

.....

(2)

**b** Calculate the probability that both letters will be the same.

.....

(4)

(Total 6 marks)

2  $\frac{1}{3}$  of the people in a club are men.

The number of men in the club is  $n$ .

a Write down an expression, in terms of  $n$ , for the number of people in the club.

.....  
(1)

Two of the people in the club are chosen at random.

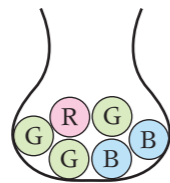
The probability that both these people are men is  $\frac{1}{10}$

b Calculate the number of people in the club.

.....  
(5)

(Total 6 marks)

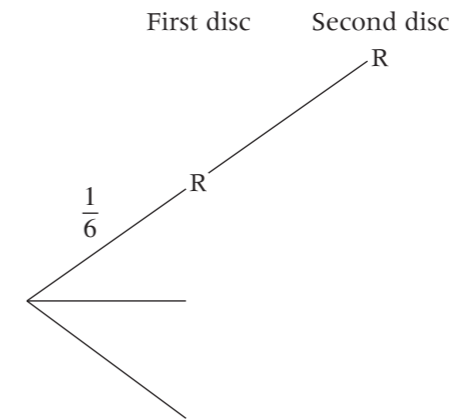
3 A bag contains 1 red disc, 2 blue discs and 3 green discs.



Xanthe chooses a disc at random from the bag. She notes its colour and replaces it.

Then Xanthe chooses another disc at random from the bag and notes its colour.

a Complete the probability tree diagram showing all the probabilities.



(3)

b Calculate the probability that both discs are the same colour.

.....  
(3)

c Calculate the probability the **neither** disc is red.

.....  
(2)

(Total 8 marks)

4 There are 10 beads in a box.

$n$  of the beads are red.

Meg takes one bead at random from the box and does not replace it.

She takes a second bead at random from the box.

The probability that she takes 2 red beads is  $\frac{1}{3}$ .

Show that  $n^2 - n - 30 = 0$

(Total 4 marks)

5 Julie does a statistical experiment. She throws a dice 600 times. She scores six 200 times.

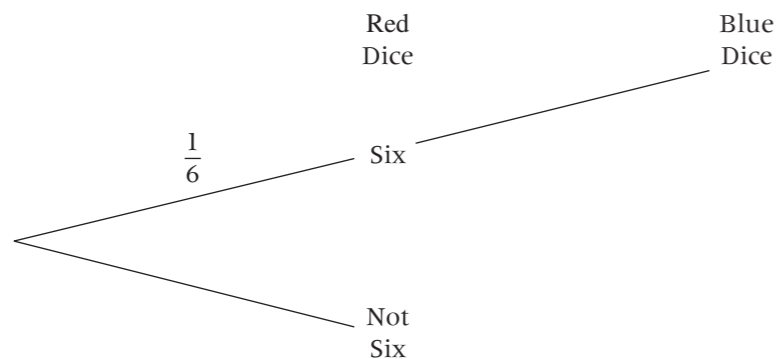
a Is the dice fair? Explain your answer.

.....  
 .....

(1)

Julie then throws a fair red dice once and a fair blue dice once.

b Complete the probability tree diagram to show the outcomes. Label clearly the branches of the probability tree diagram. The probability tree diagram has been started in the space below.



(3)

c i Julie throws a fair red dice once and a fair blue dice once. Calculate the probability that Julie gets a six on both the red dice and the blue dice.

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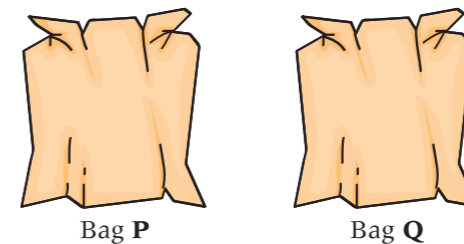
ii Calculate the probability that Julie gets at least one six.

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(5)

(Total 9 marks)

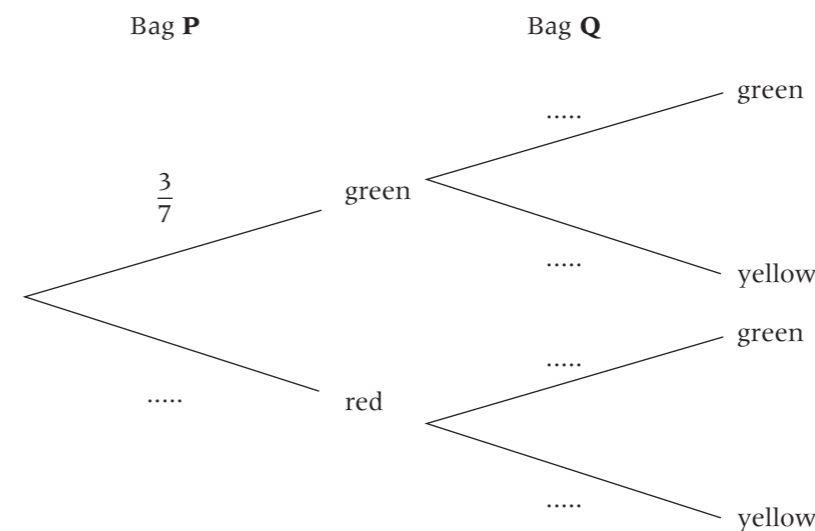
6 Jacob has 2 bags of sweets.



Bag P contains 3 green sweets and 4 red sweets. Bag Q contains 1 green sweet and 3 yellow sweets.

Jacob takes one sweet at random from each bag.

a Complete the tree diagram.



(2)

b Calculate the probability that Jacob will take 2 green sweets.

.....

(2)

(Total 4 marks)