Probability Past Paper Questions

Q1.

There are 100 beads in a bag.

 50 of the beads are red
 25 of the beads are blue
 15 of the beads are green
 The rest of the beads are yellow

 Sally takes at random a bead from the bag.

 What is the probability that the bead is

(a) green,

....

(2)

(b) black,

....

(1)

(c) yellow?

....
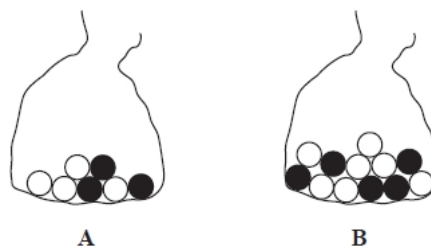
(2)

(Total for Question is 5 marks)

Q2.

* There are only black balls and white balls in bag **A** and in bag **B**, as shown in the diagram.

Heidi is going to take at random a ball from bag **A** and a ball from bag **B**.

Which bag gives Heidi the greater probability of taking a black ball, bag **A** or bag **B**?
You must show how you get your answer.

(Total for question = 3 marks)

Q3.

Kerry has two fair 6-sided dice, A and B.

Kerry is going to roll both dice.

(a) Complete the sample space diagram to show all the possible outcomes.

Dice B

		1	2	3	4	5	6
	1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
	2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
	3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
Dice A	4	(4, 1)	(4, 2)	(4, 3)	....	....	....
	5	(5, 1)	(5, 2)	(5, 3)	....	....	....
	6	(6, 1)	(6, 2)	(6, 3)	....	....	....

(1)

(b) Write down the probability that Kerry will get a 1 on dice A and a 1 on dice B.

....

(1)

Kerry rolls dice A and dice B.

*(c) Compare the probability that Kerry will get a total of 6 with the probability that she will get a total of 7

....

....

(1)

(Total for question = 3 marks)

Q4.

Sue has a bag of 18 sweets.

    5 of the sweets are blue
    7 of the sweets are red
    6 of the sweets are green

Sue takes at random a sweet from the bag.

Write down the probability that Sue

    (i)   takes a red sweet,

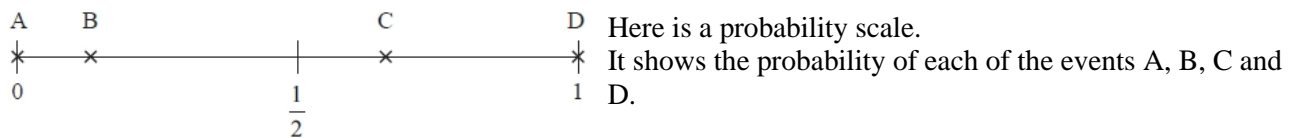   ....

    (ii)   does **not** take a green sweet,

    ....

    (iii)   takes a yellow sweet.

    ....

(Total for Question is 3 marks)

Q5.

Here is a probability scale.
It shows the probability of each of the events A, B, C and D.

(a) Write down the letter of the event that is certain.

....

(1)

(b) Write down the letter of the event that is unlikely.

....

(1)

There are 12 counters in a bag.

    3 of the counters are red.
    1 of the counters is blue.
    2 of the counters are yellow.
    The rest of the counters are green.

Caitlin takes at random a counter from the bag.

(c) Show that the probability that this counter is yellow or green is $\frac{2}{3}$.

(3)

(Total for question = 5 marks)

Q6.

There are only 7 blue pens, 4 green pens and 6 red pens in a box.

One pen is taken at random from the box.

Write down the probability that this pen is blue.

....

(Total for question = 2 marks)

Q7.

A scout group has a raffle to raise money for charity.
There is 1 prize to be won in the raffle.

Laura buys 12 raffle tickets. A total of 350 raffle tickets are sold.

Find the probability that Laura does **not** win the prize.

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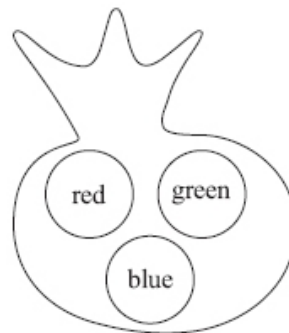**(Total for question = 2 marks)**

Q8.

There are 3 counters in a bag. One counter is red.
One counter is green.
One counter is blue. Mike takes at random a
counter from the bag.
He puts the counter back in the bag. Then Ellie
takes at random a counter from the bag. (a) Is
Ellie more likely to take a blue counter from the
bag than Mike?
You must explain your answer.

....
....

(1)

(b) Write a list of all the possible combinations of the two counters that Mike and Ellie can take.

....
....

(2)

(c) Find the probability that Mike takes a blue counter and then Ellie takes a green counter.

....

(1)

(Total for Question is 4 marks)

Q9.

Here are 10 letters.

A   A   B   C   C   C   D   E   E   F

Wallid takes at random one of the letters.

    (a) Write down the probability that he takes a letter C.

....

(2)

(b) Write down the probability that he does **not** take a letter C.

....

(1)

(Total for question = 3 marks)

Q10.

There are 29 children in a class.
13 of the children are girls.
One of the children is chosen at random.

Write down the probability that the child is a boy.

....

(Total for question = 2 marks)

Q11.

There are 9 white beads and 11 red beads in a bag.
There are no other beads in the bag.

Jim takes at random a bead from the bag.

(a) Write down the probability that the bead will be white.

....

(2)

There are 9 green beads and 11 blue beads in a box.
Jim adds 10 more beads to this box.

Jim is going to take at random a bead from the 30 beads in the box.

The probability that he will take a green bead is $\frac{2}{5}$

(b) Work out how many green beads Jim adds to the box.

....

(3)

(Total for question = 5 marks)