Simple Probability and Estimation

Question Paper 1

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Topic	Handling Data Statistics
Sub Topic	Simple Probability and estimation(Probability)
Booklet	Question Paper 1

Time Allowed: **56 minutes**

Score: **/46**

Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	70%	60%	55%	50%	<50%

1 Every morning, Samath has one glass of fruit juice with his breakfast.
He chooses at random orange juice or pineapple juice or mango juice.
The probability that he chooses orange juice is 0.6
The probability that he chooses pineapple juice is 0.3

(a) Work out the probability that he chooses mango juice.

.....

(2)

(b) There are 30 days in April.

Work out an estimate for the number of days in April on which Samath chooses orange juice.

.....

(2)

(Total for Question 1 is 4 marks)

2 John throws a biased coin 120 times.

It shows heads 90 times.

(a) John throws the coin once more.
Work out an estimate for the probability that the coin shows **tails**.

.....

(2)

Carly throws the same coin 200 times.

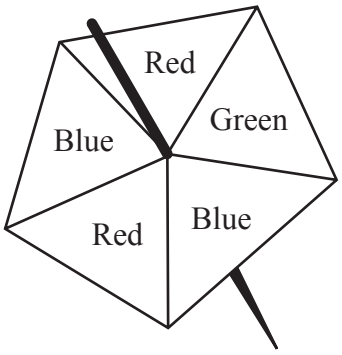
(b) Work out an estimate for the number of times the coin shows **tails**.

.....

(2)

(Total for Question 2 is 4 marks)

3 Here is a fair 5-sided spinner.



Hans spins the spinner 30 times.

Work out an estimate for the number of times the spinner lands on Red.

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(Total for Question 3 is 2 marks)

4 A bag contains 60 beads.
x of the beads are red and the rest are green.
Altaaf takes at random a bead from the bag.

(a) State, in terms of x, the probability that Altaaf takes a red bead.

.....

(1)

Altaaf puts his bead back in the bag.
Another 20 **red** beads are added to those in the bag.
The probability that Altaaf takes a red bead is now doubled.

(b) (i) Use this information to write down an equation in x
and show that your equation can be expressed as $8x = 3(x + 20)$

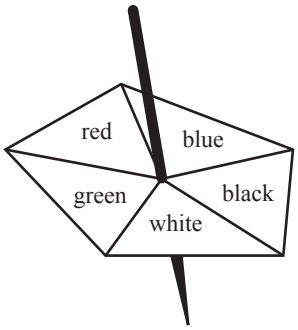
(ii) Solve $8x = 3(x + 20)$
Show your working clearly.

$x =$ .....

(5)

(Total for Question 4 is 6 marks)

5 Here is a biased 5-sided spinner.



When the spinner is spun, it can land on red, blue, black, white or green.
The probability that it lands on red, blue, black or white is given in the table.

Colour	red	blue	black	white	green
Probability	0.18	0.20	0.23	0.22	

George spins the spinner once.

(a) Work out the probability that the spinner lands on green.

.....

(2)

Heena spins the spinner 40 times.

(b) Work out an estimate for the number of times the spinner lands on blue.

.....

(2)

(Total for Question 5 is 4 marks)

6 Abid is waiting for a bus.
The probability that his bus will be early is 0.2
The probability that his bus will be on time is 0.7

Work out the probability that his bus will be either early or on time.

.....

(Total for Question 6 is 2 marks)

7K The number of runners in the London Marathon on 25th April, 2010 was 37 527.

Work out an estimate for the number of these runners whose birthday was on that day.

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(Total for Question 7 is 4 marks)

8 Parveen travels to school either by bicycle or by bus.
The probability that, on any day, she will travel by bicycle is 0.7
When she travels by bicycle, the probability that she will be late for school is 0.2
When she travels by bus, the probability that she will be late for school is 0.1

(a) Calculate the probability that, on a randomly chosen day, Parveen will travel by bus and be late for school.

.....

(2)

(b) Calculate the probability that, on a randomly chosen day, Parveen will not be late for school.

.....

(3)

(Total for Question 8 is 5 marks)

9 A box contains some coloured cards.
Each card is red or blue or yellow or green.
The table shows the probability of taking a red card or a blue card or a yellow card.

Card	Probability
Red	0.3
Blue	0.35
Yellow	0.15
Green	

George takes at random a card from the box.

(a) Work out the probability that George takes a green card.

.....

(2)

George replaces his card in the box.
Anish takes a card from the box and then replaces the card.
Anish does this 40 times.

(b) Work out an estimate for the number of times Anish takes a yellow card.

.....

(2)

(Total for Question 9 is 4 marks)

10 A box contains four different kinds of chocolates.
Debbie takes at random a chocolate from the box.
The table shows the probability of Debbie taking an Orange or a Coffee or a Caramel chocolate.

Chocolate	Probability
Orange	0.15
Coffee	0.40
Caramel	0.35
Strawberry	

(a) Work out the probability that Debbie takes a Strawberry chocolate.

.....

(2)

(b) Work out the probability that Debbie takes an Orange chocolate or a Coffee chocolate.

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(2)

(Total for Question 10 is 4 marks)

11 Sarah has a biased 4-sided spinner.
The spinner can land on 1, 2, 3 or 4

The probability that the spinner will land on 1, 2 or 4 is given in the table.

Number	1	2	3	4
Probability	0.4	0.35		0.1

(a) Work out the probability that the spinner will land on 3

.....

(2)

Ryan is going to spin the spinner 80 times.

(b) Work out an estimate for the number of times he should expect the spinner to land on 2

.....

(2)

(Total for Question 11 is 4 marks)

12 Reeta has a biased dice.

Each time Reeta rolls the dice, the probability that she will get a six is 0.1

(a) Write down the probability that she will not get a six.

.....

(1)

Reeta rolls the dice 50 times.

(b) Work out an estimate for the number of times that she will get a six.

.....

(2)

(Total for Question 12 is 3 marks)