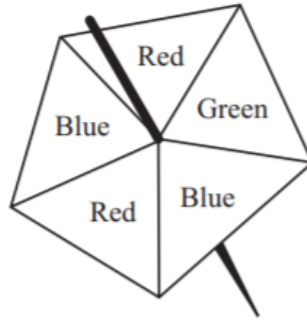


Probability Past Paper Questions Edexcel Maths IGCSE Higher Calculator

1.

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.

(Total for Question 1 is 2 marks)

2.

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 $8x = 3(x + 20)$

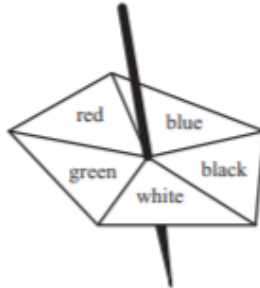
(ii) Solve $8x = 3(x + 20)$
 Show your working clearly.

$x =$ _____
 (5)

(Total for Question 2 is 6 marks)

3.

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 3 is 4 marks)

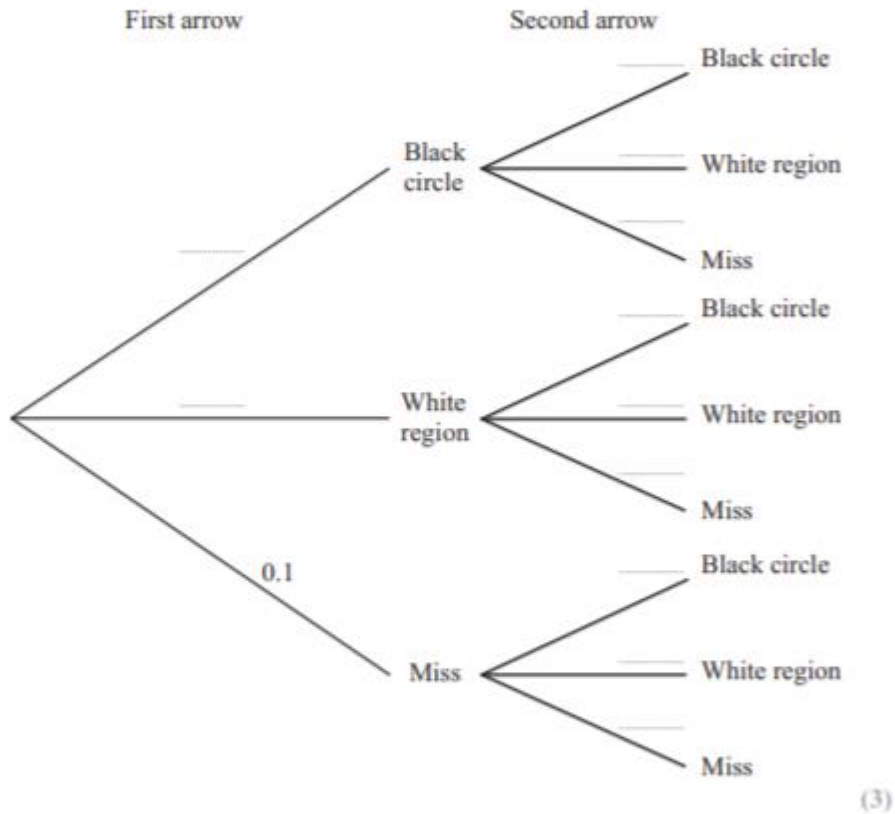
4.

A target has a black circle and a white region.
 Arrows can hit the black circle, the white region or miss the target.



Peter shoots two arrows at the target.
 On each shot, the probability that Peter's arrow misses the target is 0.1
 On each shot, the probability that Peter's arrow hits the white region is twice the probability that it hits the black circle.

(a) Complete the probability tree diagram for Peter's two arrows.



(b) An arrow which hits the black circle scores 10 points.
 An arrow which hits the white region scores 5 points.
 An arrow which misses the target scores 0 points.



Calculate the probability that Peter scores exactly 10 points with his 2 arrows.

(3)

(Total for Question is 6 marks)

5.

Morse Code uses dots (●) and dashes (—) to represent each letter of the alphabet.

Here are 10 cards.

Each card has the Morse Code for a letter on it.



(a) Kelly takes at random one of the cards.

Find the probability that she takes a card with 2 dots or a card with 3 dots.

.....
(2)

(b) Hashim has the 10 cards.

He takes at random a card 200 times.

He replaces the card each time.

Work out an estimate for the number of times he will take a card with exactly 2 dots.

.....
(2)

(c) Shani takes at random two of the 10 cards without replacement.

Calculate the probability that

(i) there is exactly 1 dot on each card she takes,

(ii) there is a total of 4 dots on the two cards she takes.

(5)

(Total for Question 8 is 9 marks)

6.

A box contains 20 nails.
The table shows information about the length of each nail.

Length of nail (mm)	25	30	40	50	60
Number of nails	1	8	4	5	2



(a) Viraj takes at random one nail from the box.

Find the probability that the length of the nail he takes is

(i) 50 mm or 60 mm,

(ii) less than 35 mm.

(4)

(b) Jamila puts all 20 nails into a bag.

She takes at random one of the nails and records its length.

She replaces the nail in the bag.

She then takes at random a second nail from the bag and records its length.

Calculate the probability that the two nails she takes

(i) each have a length of 60 mm,

(ii) have a total length of 80 mm.

(5)

(Total for Question is 9 marks)

7.

Here are 7 cards.

Each card has a number on it.



Harry takes at random two cards.

(a) Calculate the probability that the numbers on the two cards are the same.

(3)

(b) Calculate the probability that the sum of the numbers on the two cards is 5

(3)

(Total for Question 7 is 6 marks)

8.

A jar contains coloured beads.
 Ajit takes at random a bead from the jar.
 The probability that the bead is yellow is 0.08
 The probability that the bead is pink is 0.1
 The probability that the bead is blue is 0.25

(a) (i) Find the probability that the bead is yellow or blue.

(ii) Find the probability that the bead is neither yellow nor pink.

 (4)

Ajit replaces the first bead in the jar.
 He then takes at random a second bead from the jar.

(b) Find the probability that the first bead is yellow and the second bead is blue.

 (2)

A second jar contains 100 coloured beads.
20 of these beads are brown.

Ajit takes at random a bead from the jar.
He records the colour of the bead and then returns the bead to the jar.
He does this 60 times.

(c) Work out an estimate for the number of times Ajit records a brown bead.

9.

Gemma has 9 counters.
Each counter has a number on it.



Gemma puts the 9 counters into a bag.
She takes at random a counter from the bag and does not replace the counter.
She then takes at random a second counter from the bag.

(a) Work out the probability that the number on each counter is an even number.

.....
(2)

(b) Work out the probability that the number on the first counter added to the number on the second counter gives an odd number.

.....
(3)

(Total for Question 9 is 5 marks)

10.

There are 100 tiles in a bag.
Each tile is marked with a number.
The table shows information about the tiles.

Number on tile	Frequency
0	2
1	68
2	7
3	13
4	10

Carmen takes at random a tile from the bag.
She records the number on the tile and then replaces the tile in the bag.
Pablo takes at random a tile from the bag.

- (a) Work out the probability that Carmen takes a tile with the number 0 or the number 1 and Pablo takes a tile with a number greater than 1

All 100 tiles are in the bag.
Juan takes at random a tile from the bag without replacing it.
He then takes a second tile from the bag.

(b) (i) Work out the probability that the number on each tile is 4

(ii) Work out the probability that the total of the numbers on the two tiles is 2

(5)

(Total for Question 18 is 7 marks)
