



GCSE Foundation/Higher 24

Handling Data



Questions



35 minutes



30 marks

Probability

- Q1.** People in a town voted in an election.
The probability a vote was given to a particular party is shown.
One value is missing.

Party	Probability
Conservative	0.41
Labour	0.24
Liberal Democrat	0.22
UKIP	
Other	0.04

- (a) Complete the table.

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(2)

- (b) There are 15 000 people in the town.
8000 voted.

How many people in the town did **not** vote Conservative?

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Answer

(3)

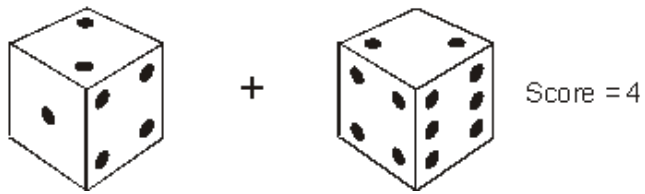
(Total 5 marks)

- Q2.** In a game you can choose to throw one dice or two dice.
If you throw one dice your score is the number you throw.



Score = 4

If you throw two dice your score is the sum of the numbers you throw.



It is your turn.

You need to score exactly 4 to win.

Should you choose to throw one dice or two dice?

Tick the correct box.

☐

1 dice

☐

2 dice

Explain your answer fully.

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(Total 4 marks)

- Q3.** George either walks home from school or he is picked up in the car by one of his parents. The table shows the probabilities for some of these outcomes.

Outcome	Walks home	Picked up by father	Picked up by mother
Probability	0.80	0.06	

Complete the table.

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(Total 2 marks)

- Q4.** Penny, Sam and Robert do this experiment on the **same** bag of **10** counters.

1. Take a counter from the bag at random.
 2. Record its colour.
 3. Put the counter back in the bag.
- Repeat this trial a number of times.

Their results are shown in this table.

Name of pupil	Number of trials	Colour of counter		
		Black	White	Green
Penny	10	0	6	4
Sam	40	3	16	21
Robert	200	22	76	102

Estimate the number of each different coloured counter in the bag.
Clearly state the set of results that you use to make the estimate.
Give a reason for your choice.

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Set of results used

Reason

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Answer Black, White, Green

(Total 4 marks)

- Q5.** (a) Matthew has a dice with 3 red faces, 2 blue faces and 1 green face.
He throws the dice 300 times.
The results are shown in the table.

Red	Blue	Green
153	98	49

- (i) What is the relative frequency of throwing a red?

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Answer

(1)

- (ii) Is the dice fair?
Explain your answer.

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(2)

- (b) Emmie has a dice with 4 red faces and 2 blue faces.
 She throws the dice 10 times and gets 2 reds.
 Emmie says the dice is **not** fair.
 Explain why Emmie could be wrong.

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(1)
 (Total 4 marks)

- Q6.** Forty people take a driving test at Centre A on one day.
 The table shows the results.

	Pass	Fail
Male	10	13
Female	6	11

- (a) A person is chosen at random from the group.
 What is the probability that the person is male?

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Answer

(2)

- (b) A person is chosen at random from the group.
 What is the probability that the person passed the test?

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Answer

(1)

- (c) It is known that throughout Britain the probability of a person passing their test is 0.7. John says it is easier to pass the test at Centre A. Explain why John could be wrong.

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(1)
(Total 4 marks)

- Q7.** Here are three statements about probability.
Tick a box to show whether you agree or disagree with each statement.
Give a reason for each answer.

- (a) Graham says, "The probability that it will rain tomorrow is $\frac{6}{5}$ ".

☐

Agree

☐

Disagree

Reason

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(1)

- (b) Mandy says, "In my box of chocolates there are 13 soft centres and 15 hard centres so the probability of my choosing a soft centre is $\frac{13}{28}$ ".

☐

Agree

☐

Disagree

Reason

.....

(1)

- (c) Tom tosses a fair coin twice.
He gets a head both times.

He says, "The probability that I will get a head the next time I throw the coin is $\frac{1}{8}$ ".

☐

Agree

☐

Disagree

Reason

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(1)

(Total 3 marks)

- Q8.** Twenty pupils each shuffle a pack of coloured cards and choose a card at random.
The colour of the card is recorded for each pupil.

(R = Red B = Blue G = Green Y = Yellow)

B	Y	Y	G	R
G	R	Y	B	B
Y	R	B	B	Y
B	B	G	R	Y

- (a) Use these results to calculate the relative frequency of each colour.

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Colour	Red	Blue	Green	Yellow
Relative frequency				

(2)

- (b) Use the results to calculate how many times you would expect a blue card if 100 pupils each choose a card at random.

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Answer

(2)

(Total 4 marks)

