

GCSE Mathematics

F

Relative Frequency

Foundation Tier | Grades 4-5

Total Marks	Time	Questions
40	40 min	20

Instructions:

- Do not use a calculator when you see: 
- Answer all questions in the spaces provided.
- Show all your working - marks are awarded for method as well as final answers.
- Cross through any work you do not want to be marked.
- Check your answers if you have time at the end.

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Edexcel-style questions**Q1** 

Grade 4

Edexcel style

A coin is flipped 40 times and lands on heads 18 times. Calculate the relative frequency of heads.

Answer

teachably

[2 marks]**Q2** 

Grade 4

Edexcel style

A spinner is spun 50 times and lands on blue 10 times. Based on this, estimate how many times it would land on blue in 300 spins.

Answer

teachably

[2 marks]**Q3** 

Grade 5

Edexcel style

A dice is rolled 60 times and lands on a 6 twenty times. The theoretical probability of rolling a 6 on a fair dice is $\frac{1}{6}$. Comment on whether the dice appears to be fair.

Answer

teachably

[2 marks]

Q4

Grade 4

Edexcel style

The table shows the results of spinning a spinner 50 times. Work out the relative frequency of landing on green.

Colour	Red	Blue	Green	Yellow
Frequency	15	10	20	5

Answer _____

teachably

[2 marks]

Q5

Grade 5

Edexcel style

A coin is flipped 10 times and gives a relative frequency of 0.7 for landing on heads. The same coin is flipped 500 times and gives a relative frequency of 0.51 for landing on heads. Explain why the estimate from 500 flips is more reliable.

Answer _____

teachably

[2 marks]

AQA-style questions**Q6** 

Grade 4

AQA style

A spinner is spun 60 times and lands on red 15 times. Calculate the relative frequency of red.

Answer

teachably

[2 marks]**Q7** 

Grade 4

AQA style

A biased coin is flipped 40 times and lands on heads 6 times. Based on this, estimate how many times it would land on heads in 200 flips.

Answer

teachably

[2 marks]**Q8** 

Grade 5

AQA style

A coin is flipped 100 times and lands on heads 52 times. The theoretical probability of a fair coin landing on heads is 0.5. Comment on whether the coin appears to be fair.

Answer

teachably

[2 marks]

Q9

Grade 4

AQA style

The table shows the results of spinning a 3-sided spinner 40 times. Work out the relative frequency of landing on 2.

Score	1	2	3
Frequency	12	18	10

Answer _____

teachably

[2 marks]

Q10

Grade 5

AQA style

A dice is rolled 20 times and gives a relative frequency of 0.25 for scoring a 6. The same dice is rolled 2000 times and gives a relative frequency of 0.17 for scoring a 6. Explain why the estimate from 2000 rolls is more reliable.

Answer _____

teachably

[2 marks]

OCR-style questions**Q11** 

Grade 4

OCR style

A dice is rolled 50 times and lands on a 6 nine times. Calculate the relative frequency of scoring a 6.

Answer

teachably

[2 marks]**Q12** 

Grade 5

OCR style

A dice is rolled 80 times and lands on a 5 twenty times. Based on this, estimate how many times it would land on a 5 in 600 rolls.

Answer

teachably

[2 marks]**Q13** 

Grade 5

OCR style

A spinner with 5 equal sections is spun 100 times and lands on red 40 times. The theoretical probability of landing on red is $\frac{1}{5}$. Comment on whether the spinner appears to be fair.

Answer

teachably

[2 marks]

Q14

Grade 4

OCR style

The table shows the results of 50 football matches. Work out the relative frequency of a win.

Result	Win	Draw	Lose
Frequency	24	10	16

Answer _____

teachably

[2 marks]

Q15

Grade 5

OCR style

A spinner is spun 15 times and gives a relative frequency of 0.4 for landing on blue. The same spinner is spun 1500 times and gives a relative frequency of 0.21 for landing on blue. Explain why the estimate from 1500 spins is more reliable.

Answer _____

teachably

[2 marks]

Teachably-style questions**Q16**

Grade 4

Teachably style

80 items are tested and 12 are found to be faulty. Calculate the relative frequency of an item being faulty.

Answer

teachably

[2 marks]**Q17**

Grade 5

Teachably style

A sample of 25 bulbs is tested and 4 are found to be faulty. Based on this, estimate how many faulty bulbs there would be in a batch of 500.

Answer

teachably

[2 marks]**Q18**

Grade 5

Teachably style

A dice is rolled 120 times and lands on a 3 eighteen times. The theoretical probability of rolling a 3 on a fair dice is $\frac{1}{6}$. Comment on whether the dice appears to be fair.

Answer

teachably

[2 marks]

Q19

Grade 4

Teachably style

The table shows the results of spinning a 4-sided spinner 40 times. Work out the relative frequency of landing on C.

Letter	A	B	C	D
Frequency	8	12	14	6

Answer _____

teachably

[2 marks]

Q20

Grade 5

Teachably style

A ball is drawn from a bag and replaced 12 times, giving a relative frequency of 0.5 for red. The same experiment is repeated 1200 times, giving a relative frequency of 0.3 for red. Explain why the estimate from 1200 draws is more reliable.

Answer _____

teachably

[2 marks]

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