JP Maths Revision

Attempt the paper before watching the solutions https://www.youtube.com/@JPMathsRevision

Foundation / Higher Tier

Relative Frequency

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The marks for **each** question are shown in brackets- *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

1. The probability that a student passes a driving theory test is 0.8.

200 students take the test.

Work out an estimate for the number of students who will pass.

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(Total for Question 1 is 2 marks)

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2. The probability that a light bulb lasts more than 1 year is 0.75.

A shop sells 120 light bulbs.

Work out an estimate for the number of bulbs that will last more than 1 year.

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(Total for Question 2 is 2 marks)

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3. The probability that a train arrives on time is 0.92.

In one week, 85 trains arrive.

Work out an estimate for the number of trains that will arrive on time.

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(Total for Question 3 is 2 marks)

4. The probability that a phone battery lasts all day is 0.85.

A company sells 60 phones.

Work out an estimate for the number of phones that will not last all day.

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(Total for Question 4 is 2 marks)

5. The probability that a packet of biscuits contains a broken biscuit is 0.1.

A factory produces 300 packets.

Work out an estimate for the number of packets with no broken biscuits.

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(Total for Question 5 is 2 marks)

6. The probability that a customer leaves a review after making a purchase is 0.35.

A company has 240 customers.

Work out an estimate for the number of customers who do not leave a review.

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(Total for Question 6 is 2 marks)

7. A bag contains counters that are blue, red, green and yellow.

The probabilities of picking each colour are shown in the table:

Colour	Blue	Red	Green	Yellow
Probability		0.25	0.4	0.15

(a) Work out the probability of picking a blue counter.

.....

(2)

(b) 200 counters are taken from the bag.

Work out an estimate for the number of red counters.

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(2)

(Total for Question 7 is 4 marks)

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8. A bag contains counters that are blue, red, green and yellow.

The probabilities of picking each colour are shown in the table:

Colour	Blue	Red	Green	Yellow
Probability	0.18	0.37		0.29

Work out the probability of picking a blue or green counter.

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(Total for Question 8 is 4 marks)

9. A bag contains counters that are blue, red, green and yellow.

The probabilities of picking each colour are shown in the table:

Colour	Blue	Red	Green	Yellow
Probability	$\frac{1}{5}$	$\frac{3}{10}$	0.27	

(a) Work out the probability of picking a yellow counter.

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(2)

(b) 500 counters are taken from the bag.

Work out an estimate for the number of blue counters.

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(2)

(Total for Question 9 is 4 marks)

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10. A spinner has four sections: blue, red, green and yellow.

The probabilities of landing on each colour are shown in the table:

Colour	Blue	Red	Green	Yellow
Probability		0.3		0.24

The probability that the spinner lands on a blue is the same as the probability of the spinner landing green.

Complete the table

(Total for Question 10 is 3 marks)

11. A spinner has four sections: blue, red, green and yellow.

The probabilities of landing on each colour are shown below:

Colour	Blue	Red	Green	Yellow
Probability	0.2		0.35	

The probability of landing on red is twice the probability of landing on yellow

(a) Complete the table

(b) The spinner is spun 500 times.

Work out an estimate for the number of times it will land on red or green.

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(2)

(Total for Question 11 is 4 marks)

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12. A box contains pens that are blue, red, green and yellow.

The probabilities of picking each colour are shown in the table:

Colour	Blue	Red	Green	Yellow
Probability	0.3	0.25	0.1	

There are 7 yellow pens in the box.

Work out the total number of pens in the box.

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(Total for Question 12 is 4 marks)

13. A box contains counters that are blue, red, green and yellow.

The probabilities of picking each colour are shown in the table:

Colour	Blue	Red	Green	Yellow
Probability	0.35	0.2		0.15

There are 18 green counters in the box.

Work out the number of red counters in the box.

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(Total for Question 13 is 4 marks)

14. A bag contains pens that are blue, red, green and yellow.

The probabilities of picking each colour are shown in the table:

Colour	Blue	Red	Green	Yellow
Probability	0.4	0.15	0.25	

There are 12 yellow pens in the box.

Work out the number of red pens in the box.

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(Total for Question 14 is 4 marks)