

**Statistics GCSE****Paper 2**

Edexcel Foundation - 2026

Foundation Tier

Variant 2

1ST0/2F

**Instructions**

- Write all answers in the spaces provided.
- Answer all questions.
- You must show all your working.
- There may not be enough space to show all your working out.

**Information**

- This is a practise paper to aid your revision for your exams.
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**Advice**

- You can get support for all these questions at our website: [www.statsgcse.com](http://www.statsgcse.com)
- This paper and more are available on our site with questions that change subtly after each attempt.
- Good luck!

1



Ava has 6 number tiles shown above.

All of the tiles are placed inside a bag then a random tile is drawn from the bag.

- (a) Select the word describes the likelihood that the tile has a 1 on it.

(1 mark)

Select **one** box.

- likely
- unlikely
- certain
- evens
- impossible

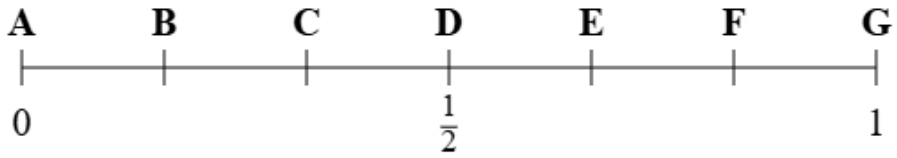
- (b) Select the word describes the likelihood that the tile has a 5 on it.

(1 mark)

Select **one** box.

- likely
- certain
- unlikely
- impossible
- evens

(c)

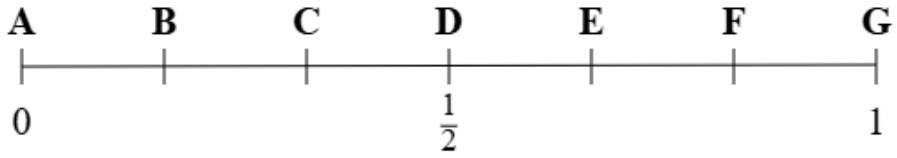


Using the probability scale, write down the letter that shows probability that the tile has a 3 on it.

(1 mark)

\_\_\_\_\_

(d)



Using the probability scale, write down the letter that shows probability that the tile has a 1 or a 2 on it.

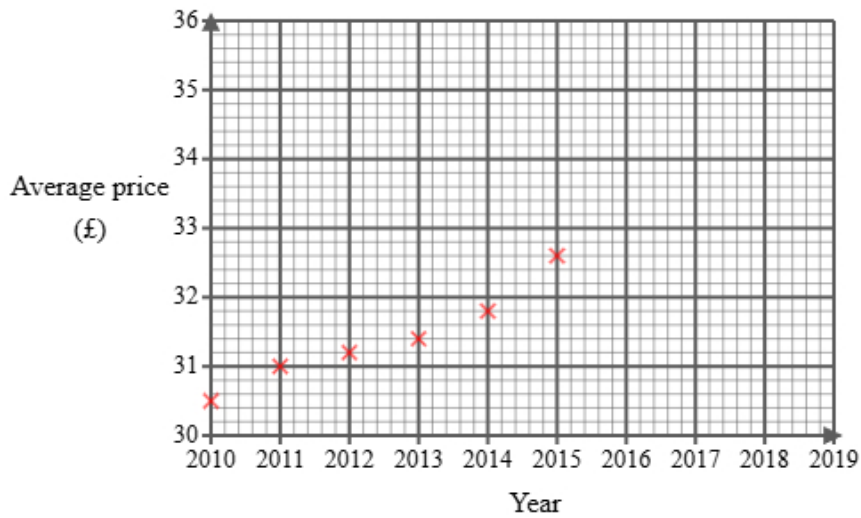
(1 mark)

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2 Sofia found the following information about the average price of a gym membership in England.

| Year              | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016 | 2017  | 2018  | 2019  |
|-------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| Average price (£) | 30.50 | 31.00 | 31.20 | 31.40 | 31.80 | 32.60 |      | 33.80 | 34.00 | 34.50 |

She did not find the price for 2016 and has started to draw a graph for the data.



Sofia then used statistical software to calculate the equation for the trend line.

- (a) (i) Plot the average price for each of 2017, 2018 and 2019  
(ii) Draw a trend line for Sofia's data  
(iii) Describe the trend in the average price of a gym membership in the UK from 2010 to 2019

(4 marks)

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(b) The gradient of Sofia's trend line is 0.46

Interpret this gradient.

(1 mark)

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(c) Explain whether or not the scale used on the 'average price' axis could make the graph misleading.

(2 marks)

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(d) Sofia draws the trend line onto the graph.

She suggests that the trend line could be used to estimate the average price for 2016 **and** 2020

Explain whether each of these estimates would be reliable.

You should **not** work them out.

(3 marks)

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- 3 A bookstore monitors the number of novels sold each day of the week. This helps them track which type of books are more popular at different times.

|           |   |
|-----------|---|
| Monday    |  |
| Tuesday   |  |
| Wednesday |  |
| Thursday  |   |
| Friday    |   |

**Key:**



represents 8 novels

- (a) On Thursday, the number of novels sold was 32.

Show this information on the pictogram.

(1 mark)

- (b) Kyler suggests redrawing the pictogram using a key with a whole-square representing 5 novels.

Explain why this key would **not** be suitable.

(1 mark)

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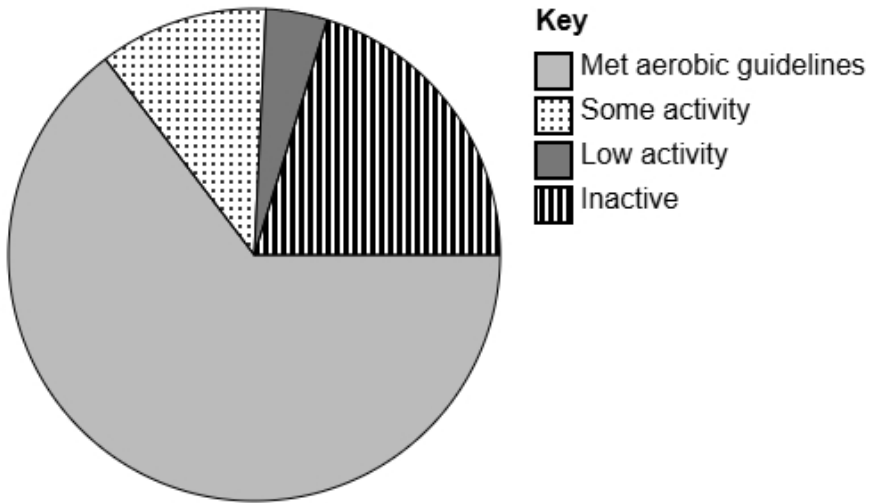


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- 4 The accurately drawn pie chart shows information about how many people in England met the guidelines for aerobic activity levels in 2021.



- (a) Explain how you can tell that most people met the aerobic guidelines in England in 2021 using the pie chart.

(1 mark)

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- (b) The population in England in 2021 was estimated to be 56 million.

Calculate an estimate for the number of people in the UK in 2021 who 'Met aerobic guidelines'.

Round your answer to the nearest million.

(2 marks)

\_\_\_\_\_ million

**5** Tom owns a sports club.

He wants to collect information about types of sports liked by people in his town.

The following list gives the information he is going to collect about people's favourite sports:

sport type

average match duration

number of players per team

**(a)** Select the information that is categorical data from the list.

(1 mark)

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**(b)** Select the information that is discrete data from the list.

(1 mark)

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**(c)** Tom would like to send a questionnaire to 50 of his customers.

He has a list of all 200 of his customers.

Explain how Tom can select a systematic sample of 50 people from his list of customers.

(2 marks)

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6 Noah is a student and wants to study types of pets owned.

He would like to find out the most common pet in his school.

Noah decides to do convenience sampling outside the school gate an hour after school and uses the data collection sheet shown here:

| Type of pet | Tally |
|-------------|-------|
| Dog         |       |
| Cat         |       |
| Fish        |       |
| Hamster     |       |

(a) State the population for this study.

(1 mark)

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(b) Describe what is meant by a convenience sample.

(1 mark)

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(c) Give **one** disadvantage of convenience sampling.

(1 mark)

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(d) Discuss whether this data collection sheet is appropriate for Noah to collect the data.

(2 marks)

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(e) After collecting the data, Noah would like to display the data in a diagram.

Discuss whether or not a stem and leaf diagram would be suitable.

(2 marks)

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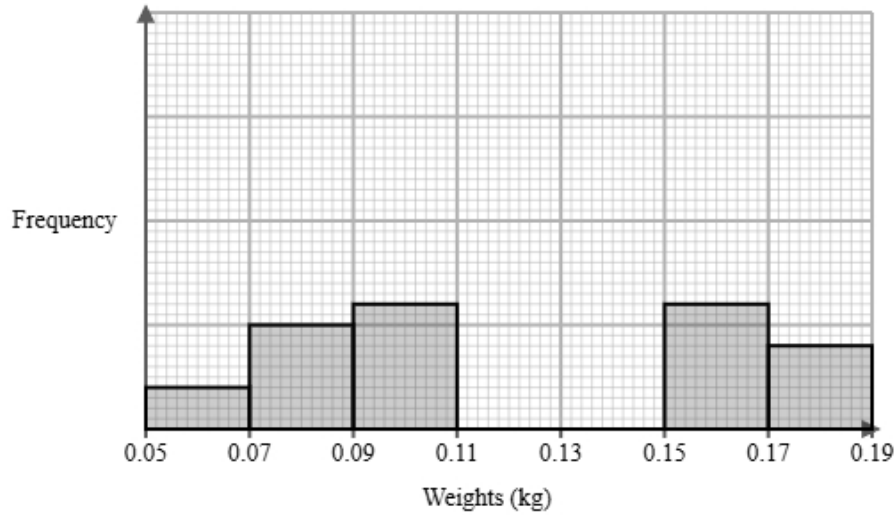
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- 8 A farm owner measured the weights of Emperor carrots and Danvers carrots in farm plot 1. They recorded the weights after 4 months. The incomplete histogram and grouped frequency table give information about the weights of Emperor carrots in farm plot 1.



| Weights $w$ (kg)     | Frequency |
|----------------------|-----------|
| $0.05 < w \leq 0.07$ | 2         |
| $0.07 < w \leq 0.09$ | 5         |
| $0.09 < w \leq 0.11$ | 6         |
| $0.11 < w \leq 0.13$ | 12        |
| $0.13 < w \leq 0.15$ | 8         |
| $0.15 < w \leq 0.17$ |           |
| $0.17 < w \leq 0.19$ |           |

- (a) Use the information in the histogram to complete the table.

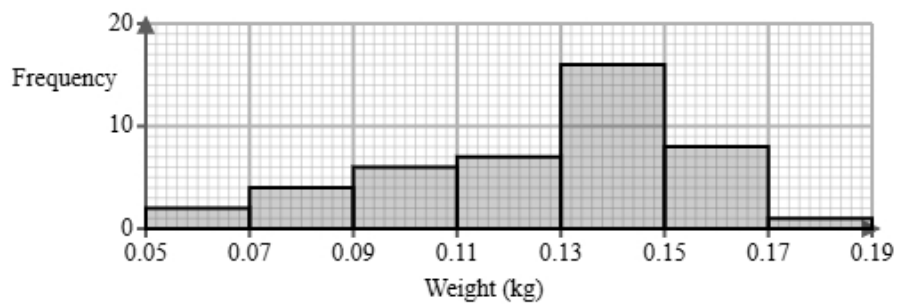
(2 marks)

| Weights $w$ (kg)     | Frequency |
|----------------------|-----------|
| $0.05 < w \leq 0.07$ | 2         |
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| $0.09 < w \leq 0.11$ | 6         |
| $0.11 < w \leq 0.13$ | 12        |
| $0.13 < w \leq 0.15$ | 8         |
| $0.15 < w \leq 0.17$ | _____     |
| $0.17 < w \leq 0.19$ | _____     |

(b) Use the information in the table to complete the histogram.

(2 marks)

(c) The histogram below shows data on the weights of Danvers carrots after 4 months.



Identify and interpret the type of skew shown in the histogram for Danvers carrots.

(2 marks)

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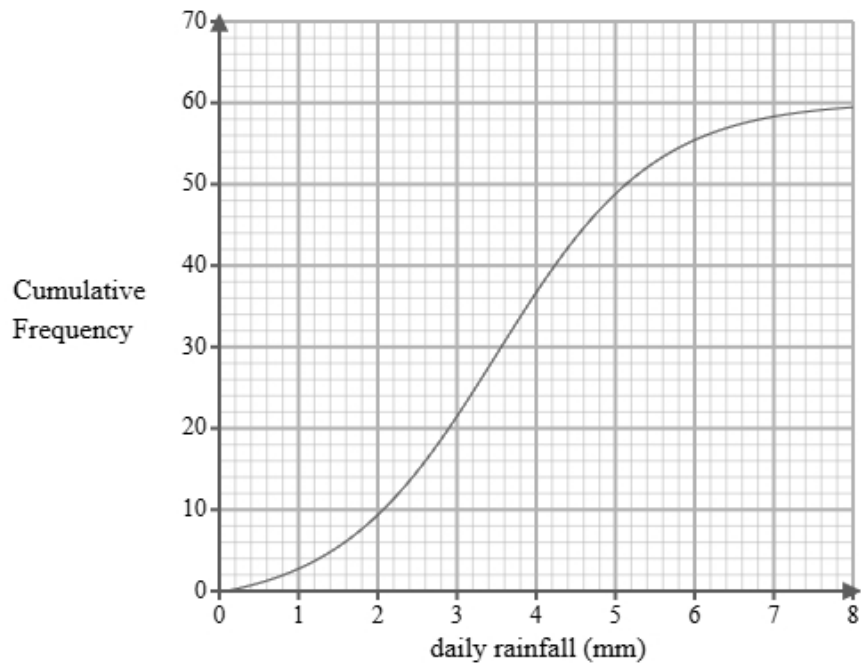
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- 9 A researcher measures the daily rainfall, in millimetres, recorded over 60 days in a small town. A cumulative frequency diagram is drawn from the data.



Complete the table below from the cumulative frequency diagram.

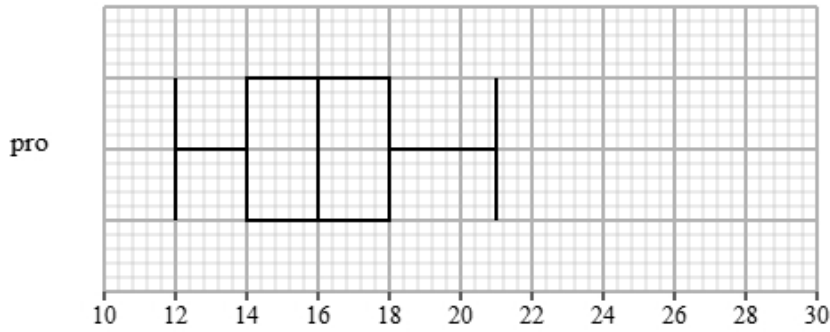
| Lower quartile | Median | Upper quartile |
|----------------|--------|----------------|
|                |        |                |

(2 marks)

10 Liam recorded the completion times for pro and beginner runners in a 5K race.

Both groups ran the same course.

The box plot presents data on the completion times for the pro runners.

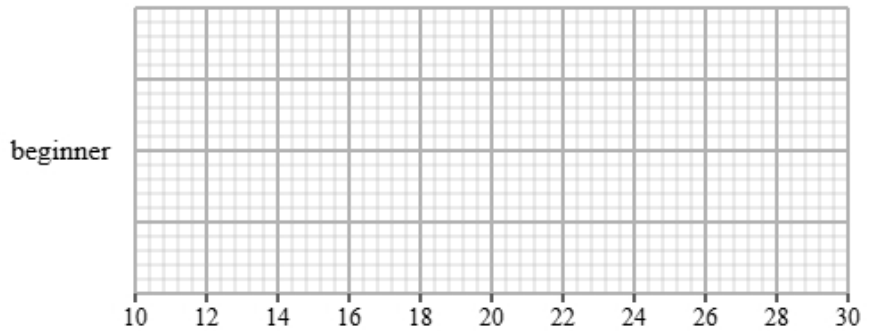


The table gives information about the completion times for the beginner runners.

| Least tall | Lower quartile | Median | Upper quartile | Most tall |
|------------|----------------|--------|----------------|-----------|
| 17         | 19             | 20     | 24             | 30        |

(a) Draw a box plot for the completion times for the beginner runners.

(2 marks)



(b) Compare the two distributions of completion times.

Give three comparisons and interpret one of these comparisons.

(4 marks)

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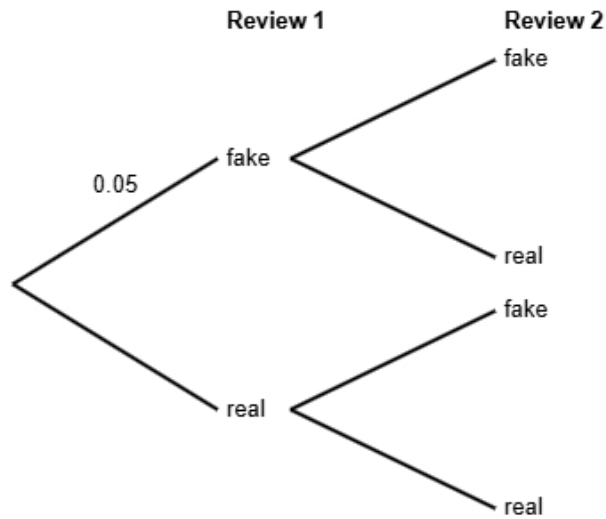
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- 11** Research suggests that 5% of online product reviews are fake.  
 All other reviews are genuine.  
 Emma is reading two reviews for a product.  
 She does not know if each review is fake or real.



- (a)** Complete the probability tree diagram.

(2 marks)

- (b)** Find the probability that both of Emma's reviews are real.

(2 marks)

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- (c) Emma states that the probability that exactly one reviews is fake is less than 10%  
Find out whether or not Emma is correct.

(3 marks)

**12** The table shows information about apartments for rent in Manchester.

| number of rooms | number of apartments |
|-----------------|----------------------|
| 1               | 225                  |
| 2               | 180                  |
| 3               | 495                  |
| 4               | 120                  |
| 5 or more       | 180                  |
| Total           | 1200                 |

A researcher wants to investigate the price of these apartments and takes a stratified sample of 80 apartments according to the number of rooms.

**(a)** The researcher says the mode of the number of rooms for these apartments is 3.

Explain how the researcher knows this.

(1 mark)

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**(b)** Work out the number of apartments in the sample for each number of rooms.

| number of rooms | number of apartments in the sample |
|-----------------|------------------------------------|
| 1               |                                    |
| 2               |                                    |
| 3               |                                    |
| 4               |                                    |
| 5 or more       |                                    |

(3 marks)

(c) Describe how the 80 apartments in the sample should be selected.

(3 marks)

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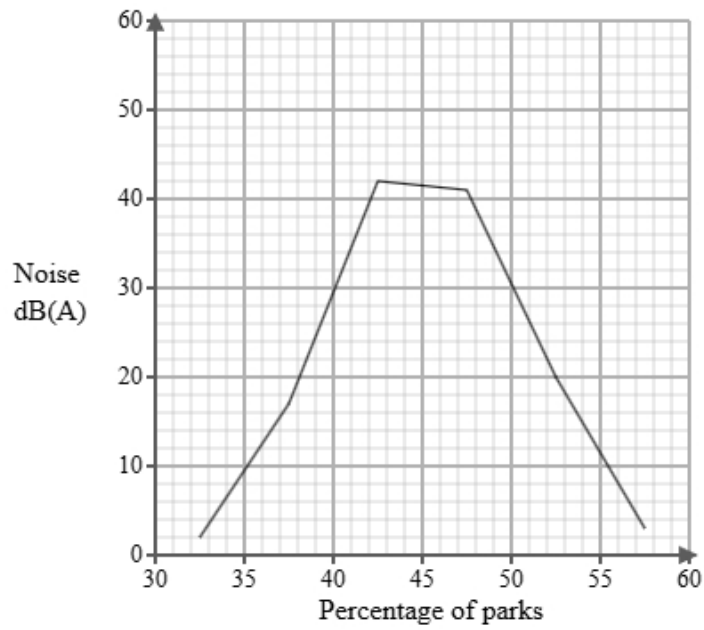
- 13 Luca works for a public health institute. He has been tasked with investigating noise levels in urban parks. Below is a section of the spreadsheet he used to record his findings.

| Noise dB(A)      | Percentage of parks |
|------------------|---------------------|
| $30 < n \leq 35$ | 8                   |
| $35 < n \leq 40$ | six                 |
| $40 < n \leq 45$ | 8                   |
| $45 < n \leq 50$ | 111                 |
| $50 < n \leq 55$ | 57                  |
| $55 < n \leq 60$ | 10                  |
| Total            | 100                 |

Luca cleans the data to create the table below.

| Noise dB(A)      | Percentage of parks |
|------------------|---------------------|
| $30 < n \leq 35$ | 8                   |
| $35 < n \leq 40$ | 6                   |
| $40 < n \leq 45$ | 8                   |
| $45 < n \leq 50$ | 11                  |
| $50 < n \leq 55$ | 57                  |
| $55 < n \leq 60$ | 10                  |
| Total            | 100                 |

A frequency polygon has been drawn for noise levels in residential streets.



- i) On the same graph, draw the frequency polygon for noise levels in urban parks.
- ii) Using the two frequency polygons, compare the skew of the distributions and explain what your comparison means in context.

(4 marks)

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- 14 The table shows information about the consumer price index (CPI) and average cost of a book (£) in England for Jan 1995, Jan 2005 and Jan 2015.

|                            | Jan 1995 | Jan 2005 | Jan 2015 |
|----------------------------|----------|----------|----------|
| consumer price index       | 100      | 116      | 149      |
| average cost of a book (£) | 4.57     | 5.15     | 7.35     |

Describe how the increase in average cost of a book (£) compares with the CPI over the ten years to Jan 2005 and over the twenty years to Jan 2015.

(5 marks)

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**15** Tom is investigating how the distance travelled in km,  $x$ , affects the resale price (£),  $y$  for two types of bicycles, type A and type B.

He found ten bicycles of each type and recorded their distance travelled and resale price and plotted each on scatter diagrams.

He then drew a line of best fit on each diagram and found the gradient and y-intercept of each line.

Here are the results:

| Type | Gradient of line of best fit | y-intercept of line of best fit |
|------|------------------------------|---------------------------------|
| A    | -15                          | 600                             |
| B    | -10                          | 750                             |

Interpret and compare these results in context.

(5 marks)

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