S17-test Pictograms: Test Pack

EDEXCEL 1ST0 · Calculator allowed · about 20 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 For each statement about pictograms, write down whether it is True or False.

(i) One symbol in a pictogram must always represent exactly one item. **(1)**

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(ii) A pictogram needs a key so that the reader knows how many items one whole symbol stands for. **(1)**

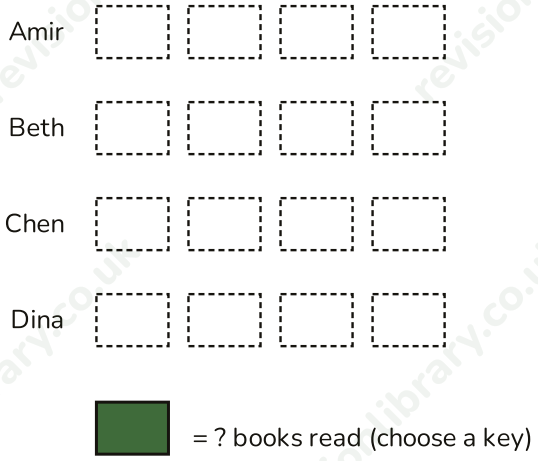
.....

(Total for Question 1 is 2 marks)

2 Amir, Beth, Chen and Dina were asked how many books they read over the summer holiday.

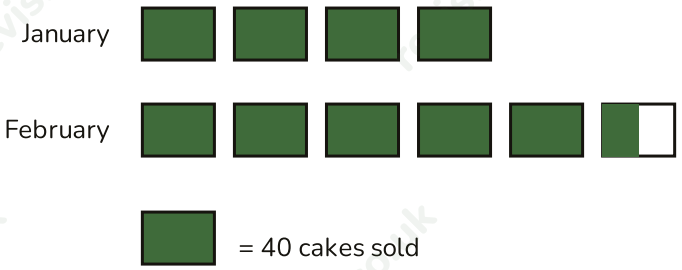
Name	Books read
Amir	18
Beth	9
Chen	15
Dina	6

Choose a suitable key and draw a pictogram, using the same symbol for a book, to show this information. Make sure your key is clearly shown.



(Total for Question 2 is 4 marks)

3 A bakery recorded the number of cakes it sold in January and in February. The pictogram shows the totals for each month.



(a) Work out the total number of cakes sold across the two months. **(2)**

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(b) Work out the percentage increase in cakes sold from January to February. Give your answer to 1 decimal place. **(2)**

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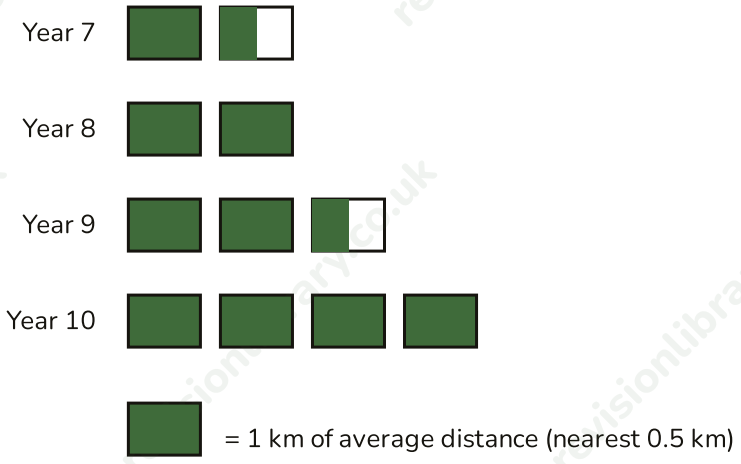
(Total for Question 3 is 4 marks)

4 A student is investigating the question: 'Do students in older year groups travel further to school, on average, than students in younger year groups?' They plan to collect data from Years 7 to 10 and display the average distance travelled (in km) using a pictogram.



(a) PLAN: Write down a suitable hypothesis for this investigation. **(1)**

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(b) COLLECT: State one way the student could make sure the distances collected from each year group are reliable and can be fairly compared. **(1)**

(c) PROCESS: Work out the total average distance shown across all four year groups. **(2)**

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(d) PROCESS: Work out how much greater the average distance is for Year 10 than for Year 7. **(2)**

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(e) INTERPRET: Using the values shown on the pictogram, comment on whether the data supports the student's hypothesis. **(2)**

(Total for Question 4 is 8 marks)

Mark scheme · S17-test Pictograms: Test Pack

Question 1

- (i) **B1** False cao
- **(i) Answer: False**
- (ii) **B1** True cao
- **(ii) Answer: True**

Question 2

- **B1** a suitable key stated, e.g. 1 symbol = 6 books, so that every value can be shown using only whole or half symbols
- **B1** Amir's row drawn with 3 whole symbols and Dina's row drawn with 1 whole symbol (ft from key)
- **B1** Beth's row drawn with 1 whole symbol plus a half symbol and Chen's row drawn with 2 whole symbols plus a half symbol (ft from key)
- **B1** pictogram fully labelled, with the key clearly shown alongside the diagram
- **Answer: Key: 1 symbol = 6 books. Amir: 3 symbols. Beth: 1 whole symbol + 1 half symbol. Chen: 2 whole symbols + 1 half symbol. Dina: 1 symbol.**

Question 3

- (a) **M1** 160 + 220, oe
- (a) **A1** 380 cao
- **(a) Answer: 380**
- (b) **M1** (220 - 160) / 160 x 100, oe
- (b) **A1** 37.5% cao
- **(b) Answer: 37.5%**

Question 4

- (a) **B1** students in older year groups travel further to school, on average, than students in younger year groups oe
- **(a) Answer: Students in older year groups travel further to school, on average, than students in younger year groups.**
- (b) **B1** e.g. ask a similar number of students from each year group (or take a suitable random sample from each), using the same units (km) and the same question each time oe
- **(b) Answer: Ask a similar number of students from each year group, using the same units (km) and the same question each time, so the averages can be fairly compared.**
- (c) **M1** 1.5 + 2 + 2.5 + 4, oe
- (c) **A1** 10 cao
- **(c) Answer: 10 km**
- (d) **M1** 4 - 1.5, oe
- (d) **A1** 2.5 cao
- **(d) Answer: 2.5 km**
- (e) **B1** yes, the data supports the hypothesis
- (e) **B1** because the average distance increases at each year group, from 1.5 km in Year 7 up to 4 km in Year 10 oe
- **(e) Answer: Yes, the data supports the hypothesis, because the average distance travelled increases steadily from 1.5 km in Year 7 up to 4 km in Year 10.**