GCSE Maths: Types of data and collecting data (Higher): answers

GCSE Maths - Statistics - Higher - Lesson 24.1

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at **websink.site/gcse/maths/ch24-statistics/higher/types-of-data-and-collecting-data/**

Exercise 24A Types of data and collecting data Non-calculator

1 **Say whether each type of data is categorical, discrete or continuous.**

(a) The colour of cars in a car park

Answer: Categorical

(b) The number of goals scored in a football match

Answer: Discrete

(c) The time taken to run 100 m

Answer: Continuous

(d) Shoe size

Answer: Discrete

(e) The height of a tree

Answer: Continuous

(f) A person's favourite film

Answer: Categorical

2 **Say whether each is primary data or secondary data.**

(a) Sam asks every student in her class what they ate for breakfast.

Answer: Primary

(b) Ali looks up last year's rainfall figures on the Met Office website.

Answer: Secondary

(c) A shop counts its own sales from its till receipts.

Answer: Primary

(d) A student uses population figures from a government website.

Answer: Secondary

3 **The colours of 16 cars in a car park were: Red, Blue, Blue, Green, Red, Blue, Yellow, Red, Blue, Green, Blue, Red, Yellow, Blue, Red, Green. Complete a tally chart and frequency table.**

Answer: Red 5, Blue 6, Green 3, Yellow 2

4 **The number of brothers and sisters of each of 24 students is: 2, 1, 0, 3, 1, 2, 2, 1, 0, 4, 2, 1, 1, 3, 2, 0, 1, 2, 3, 1, 2, 0, 1, 2. Complete a frequency table.**

Answer: 0 4, 1 8, 2 8, 3 3, 4 1

5 The ages, in years, of 20 people at a club are: 12, 25, 33, 18, 41, 27, 35, 14, 22, 30, 46, 19, 38, 24, 29, 11, 36, 43, 21, 28. Use the classes $10 \le a < 20$, $20 \le a < 30$, $30 \le a < 40$ and $40 \le a < 50$ to complete a grouped frequency table.

Answer: 5, 7, 5, 3

6 The two-way table shows how 59 students travel to school. Find the three missing numbers.

Travel	Bus	Walk	Car	Total
Boys	14	?	7	30
Girls	11	12	?	29
Total	?	21	13	59

(a) Boys who walk

Answer: 9

(b) Girls who come by car

Answer: 6

(c) Total who come by bus

Answer: 25

7 Use the table in question 6 (once it is completed) to answer these questions.

Travel	Bus	Walk	Car	Total
Boys	14	9	7	30
Girls	11	12	6	29
Total	25	21	13	59

(a) How many girls walk to school?

Answer: 12

(b) How many students do not come by car?

Answer: 46

(c) What fraction of the boys come by bus? Give your answer in its simplest form.

Answer: $\frac{7}{15}$

8 There are 80 students in a school club. 45 are girls. 38 students are in the choir, and 22 of the girls are in the choir. Use the table to work out the missing values.

	In the choir	Not in the choir	Total
Girls	22	?	45
Boys	?	?	?
Total	38	?	80

(a) Girls not in the choir

Answer: 23

(b) Boys in the choir

Answer: 16

(c) Boys not in the choir

Answer: 19

9 **A student writes the question: "Everyone agrees that homework is far too long, don't you?" Give a reason why this is a poor question and write a better version.**

Answer: It is a leading question. Better: "How long does your homework usually take each night?" with boxes.

10 **A question asks: "How many hours of television do you watch each week? 0–5 5–10 10–15 ". Explain two things wrong with the response boxes.**

Answer: The boxes overlap (5 and 10 are in two boxes) and do not cover every answer (more than 15 hours).

11 **The frequency table shows the number of pets owned by each student in a class.**

Pets owned	Frequency
0	6
1	9
2	7
3	3
4	2

(a) How many students are in the class?

Answer: 27

(b) How many students own at least 2 pets?

Answer: 12

(c) How many pets do the students own altogether?

Answer: 40

12 **Priya says: "The number of goals scored in a match is continuous because it is a number." Is she correct? Explain.**

Answer: No: goals are counted, so the data is discrete.

13 **Sam collects data on how long students take to travel to school. She says her data is secondary because she wrote it down. Explain whether she is correct, and say what kind of numerical data it is.**

Answer: No: it is primary data, and the times are continuous.

14 **There are 50 students. 26 are boys. 30 prefer football. 8 of the girls prefer football. Complete the two-way table, then work out the fraction of the girls who do not prefer football. Give your answer in its simplest**

form.

> **Answer:** $\frac{2}{3}$ (16 of the 24 girls)

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