Unit 6 · Information and Data

ANSWER KEY · FOR TEACHERS

Full marks 29

Give the marks for the points in the marking scheme; an answer in other words that says the same is right.

1 Key words

1. data
2. information
3. survey
4. record
5. field
6. cell
7. formula
8. ascending

K · 4

Each carries 0.5 mark.

2 Label the diagram

1. formula bar shows what is in the selected cell
2. header row names the fields
3. a record everything about Dipa
4. a field: column C every student's distance

K · 2

Each carries 0.5 mark.

3 Multiple choice

i. **b.** organizing and processing it so that it answers a question — K · 1

Data becomes information when it is sorted, counted, compared or summed so that it means something to someone. Storing, typing or printing data doesn't change what it tells you.

ii. **c.** the student whose trip takes the longest — U · 1

Descending means largest first, so the biggest number of minutes, the longest trip, comes at the top. (In our table that is Gopal, 45 minutes.)

iii. **c.** `=SUM(B2:B9)` — A · 1

A formula starts with =, and SUM adds the range B2:B9. Without the = the cell just shows the words; `B2-B9` subtracts one cell from another; COUNT would give 8, the number of prices, not their total.

iv. **b.** What share of a family's monthly spending goes on food? — U · 1

A pie shows the shares of one whole: the month's spending is the whole, food is one share. The others compare separate amounts, which a bar chart shows better (and rainfall or heights don't make one whole).

v. **c.** the second twice as tall as the first, though 70 isn't twice 60 — A · 1

With the axis starting at 50, the bars show only the parts above 50: 10 and 20. So the second looks twice as tall, though 70 is only about one sixth more than 60.

4 Survey questions

MARKING SCHEME — U · 2

- ✓ The choices overlap (a trip of exactly 10 or 20 minutes fits two), and they don't fit everyone (a trip of more than 30 minutes fits none).
- ✓ Better choices, such as: ☐ less than 10 minutes ☐ 10 to less than 20 ☐ 20 to less than 30 ☐ 30 minutes or more (or asking for the number of minutes).

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5 Spreadsheet formulas

ANSWER **A · 4**

i. `=SUM(B2:B8)` gives 40 + 35 + 28 + 30 + 45 + 52 + 64 = **294**.
ii. `=AVERAGE(B2:B8)` gives 294 ÷ 7 = **42**.
iii. `=MAX(B2:B8)` gives **64** (Saturday).
iv. All three work themselves out again at once: the total becomes 301 and the average 43; the most stays 64. Nothing has to be worked out by hand.

MARKING SCHEME

✓ `=SUM(B2:B8)`, 294.
✓ `=AVERAGE(B2:B8)`, 42.
✓ `=MAX(B2:B8)`, 64.
✓ The answers change by themselves when B4 is corrected (the total to 301, the average to 43).

6 Find and fix the mistake

MARKING SCHEME **A · 3**

✓ i. It has no =, so the cell just shows the words; correct: `=SUM(B2:B8)`.
✓ ii. The minus sign subtracts B8 from B2 instead of giving the range; correct: `=SUM(B2:B8)`, with a colon.
✓ iii. The range misses row 8 (Saturday), so the answer is wrong but looks right; correct: `=SUM(B2:B8)`.

7 Sorting

ANSWER **A · 2**

Name	Marks
Dorje	90
Bikram	81
Sunita	77
Rita	64

Each row is one student's record. If only the Marks column moved, the marks would sit beside the wrong names (Rita would seem to have 90).

MARKING SCHEME

✓ Dorje 90, Bikram 81, Sunita 77, Rita 64: largest first, each name with its own mark.
✓ A row is one student's record, so whole rows move; otherwise marks end up beside the wrong names.

8 Charts

a. **ANSWER** **A · 2**

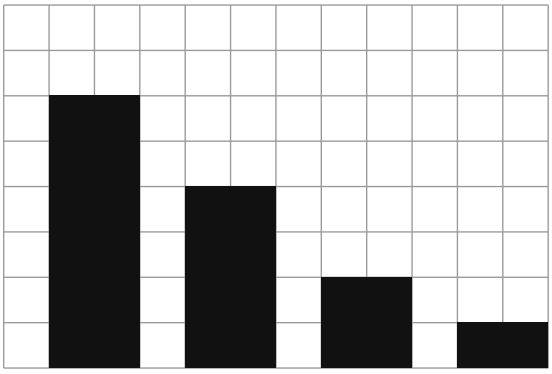
Football 8 ÷ 20 = 0.4 = **40%**; cricket 6 ÷ 20 = **30%**; volleyball 4 ÷ 20 = **20%**; basketball 2 ÷ 20 = **10%**. Together: 100%.

MARKING SCHEME

✓ Football 40% and cricket 30%.
✓ Volleyball 20% and basketball 10%.

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b. **ANSWER** **A · 3**



One square is one student. From the left: football, cricket, volleyball, basketball.

Title: “Favorite sport of 20 students”. The sports along the bottom axis, named “Sport”; up the side, “Students”, numbered from 0 to 8.

MARKING SCHEME

- ✓ Four bars of the right heights: 8, 6, 4 and 2 squares, each named.
- ✓ A title that says what the chart shows.
- ✓ Both axes named (sport, students), the scale starting at 0.

9 Think

ANSWER **HA · 2**

The axis starts at 50, not 0, so the bars show only the parts above 50: 10 and 5. The shop’s bar looks twice as tall, though 60 is only 5 cups more than 55. Drawn honestly, the axis starts at 0 and has numbers (0, 10, 20 … 60), both axes are named, and the title is plain (“Cups of tea sold in a day”): the two bars then look almost the same height, as they should.

MARKING SCHEME

- ✓ The axis starts at 50, not 0, so the bars show only 10 and 5: one looks twice the other, though the difference is only 5 cups.
- ✓ Honest: start the axis at 0, number it, name both axes, and give a plain title.

10 Activity: A survey of my class

(not marked)

WHAT STUDENTS SHOULD FIND

The counts add up to the number of students who answered, and the shares to 100% (or very nearly, after rounding). Tally marks in bundles of five make the counting quick. The biggest share is the most common way of coming; in many schools, walking or the school bus. Each share is the count ÷ the total, × 100.

Marks by level	Knowledge	Understanding	Application	Higher ability	Total
Marks	7	4	16	2	**29**

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