Data Visualisation and Analysis

Standard difficulty · 20 questions · 40 marks · Time: 36 minutes

Name: _____ Date: _____ Score: ____ / 40

Show your working for Sections B and C. Answers are on the last page — try every question first!

Section A — Choose the correct answer — 8 × 1 = 8 marks

1. To show how a value changes over months, the best chart is usually a:
(a) pictograph **(b)** table only **(c)** pie chart **(d)** line graph

2. Which chart is best for showing how the whole class travels to school, as parts of a whole?
(a) a pie chart **(b)** a map **(c)** a Venn diagram **(d)** a tally table

3. In a survey of 36 children, 1 walk to school. In a pie chart of the survey, what angle does this slice get?
(a) 1° **(b)** 3° **(c)** 20° **(d)** 10°

4. A line graph shows trees planted each month: Jan 90, Feb 20, Mar 150, Apr 125, May 95, Jun 125. Between which two months did the line rise the most?
(a) Feb to Mar **(b)** Mar to Apr **(c)** Apr to May **(d)** Jan to Feb

5. Goals scored in 7 matches: 11, 16, 6, 30, 22, 24, 24. What is the mean?
(a) 6 **(b)** 22 **(c)** 19 **(d)** 30

6. Goals scored in 7 matches: 16, 15, 4, 14, 30, 20, 19. What is the median?
(a) 30 **(b)** 17 **(c)** 16 **(d)** 4

7. Goals scored in 7 matches: 19, 14, 23, 11, 19, 27, 22. What is the mode?
(a) 19 **(b)** 11 **(c)** 27 **(d)** 20

8. Goals scored in 5 matches: 11, 28, 10, 2, 3. What is the range?
(a) 26 **(b)** 28 **(c)** 11 **(d)** 10

Section B — Short answer — 8 × 2 = 16 marks

9. When should you use a pie chart?

10. In a survey of 120 children, 119 come by car. In a pie chart of the survey, what angle does this slice get?

11. A line graph shows trees planted each month: Jan 75, Feb 50, Mar 60, Apr 130, May 95, Jun 90. Between which two months did the line rise the most?

12. Goals scored in 7 matches: 16, 7, 15, 28, 25, 17, 4. What is the mean?

13. Goals scored in 7 matches: 30, 17, 13, 5, 8, 25, 29. What is the median?

14. Goals scored in 5 matches: 26, 19, 10, 23, 26. What is the mode?

15. Goals scored in 7 matches: 6, 2, 12, 23, 20, 20, 26. What is the range?

16. Marks out of 100:
Name: Maths, Hindi, Art
Sana: 25, 75, 75
Kabir: 20, 20, 100
Zoya: 95, 70, 65
Asha: 90, 70, 35
How many children scored more than 65 in Hindi?

Section C — Word problems — 4 × 4 = 16 marks

17. A survey of 60 children: 24 walk, 18 bus, 12 cycle, 6 car. (a) Find the pie chart angle for each. (b) Which is the largest slice? (c) Check the angles add to 360°.

18. A survey of 72 children: 11 walk, 10 bus, 38 cycle, 13 car. Find the pie chart angle for (a) walk (b) bus (c) cycle (d) car.

19. (a) Goals scored in 5 matches: 15, 21, 12, 16, 21. What is the mean?
(b) Goals scored in 5 matches: 23, 24, 4, 19, 14. What is the median?

20. (a) A line graph shows trees planted each month: Jan 25, Feb 50, Mar 120, Apr 45, May 25, Jun 120. Between which two months did the line rise the most?
(b) Books read by each class (each 📗 stands for 10 books):
6A: 📗📗📗
6B: 📗📗📗
6C: 📗📗📗 and a half 📗
6E: 📗📗📗📗📗📗📗
How many books did class 6C read?

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Answer key

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Q	Answer	Working
1	**(d) line graph**	—
2	**(a) a pie chart**	—
3	**(d) 10°**	1/36 × 360°
4	**(a) Feb to Mar**	changes: −70, +130, −25, −30, +30
5	**(c) 19**	133 ÷ 7
6	**(c) 16**	in order: 4, 14, 15, 16, 19, 20, 30; the middle one
7	**(a) 19**	19 appears 2 times
8	**(a) 26**	28 − 2
9	**To show how a whole is shared into parts, e.g. how a class travels to school.**	—
10	**357°**	119/120 × 360°
11	**Mar to Apr**	changes: −25, +10, +70, −35, −5
12	**16**	112 ÷ 7
13	**17**	in order: 5, 8, 13, 17, 25, 29, 30; the middle one
14	**26**	26 appears 2 times
15	**24**	26 − 2
16	**3**	Hindi: 75, 20, 70, 70
17	**(a) Walk 144°, bus 108°, cycle 72°, car 36°. (b) Walk. (c) 144 + 108 + 72 + 36 = 360°.**	—
18	**(a) 55°; (b) 50°; (c) 190°; (d) 65°**	each count ÷ 72 × 360°; they add up to 360°
19	**(a) 17; (b) 19**	(a) 85 ÷ 5; (b) in order: 4, 14, 19, 23, 24; the middle one
20	**(a) May to Jun; (b) 35**	(a) changes: +25, +70, −75, −20, +95; (b) 3 × 10 + 5

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