

Sheet – 0x: Frequency Table

Question 1: Frequency Table (Categorical Data)

A survey was conducted among 50 students to find out their favorite fruit. The results are as follows:

Apple: 15 students

Banana: 12 students

Orange: 8 students

Grapes: 10 students

Mango: 5 students

Construct a frequency table for the data.

Fruit	Frequency
Apple	15
Banana	12
Orange	8
Grapes	10
Mango	5
Total	50

Question 2: Proportion (Categorical Data)

Using the frequency table from Question 1, what is the **proportion** of students who chose Banana as their favorite fruit?

Answer:

- Total number of students = 50
- Number of students who chose Banana = 12

Proportion = Number choosing Banana / Total number

$$\text{Proportion} = 12 / 50 = 0.24$$

Question 3: Percentage (Categorical Data)

What percentage of students chose Mango as their favorite fruit?

Answer:

- Number of students who chose Mango = 5
- Total students = 50

Percentage = (Number choosing Mango / Total number) $\times$ 100%

$$\text{Percentage} = (5 / 50) \times 100\% = 10\%$$

Question 4: Frequency Table (Numerical Data with Repetition)

The following are the test scores (out of 10) of 20 students:

8, 7, 9, 6, 7, 8, 5, 8, 7, 9, 6, 5, 7, 8, 7, 6, 5, 7, 8, 7

Construct a frequency table for the test scores.

Answer:

Score	Frequency
5	3
6	3
7	7
8	5
9	2
Total	20

Question 5: Proportion (Numerical Data with Repetition)

Using the frequency table from Question 4, what is the proportion of students who scored 7?

Answer:

Number of students who scored 7: 7

- Total number of students: 20
- Proportion = Number scoring 7 / Total number

$$\text{Proportion} = 7 / 20 = 0.35$$

Question 6: Percentage (Numerical Data with Repetition)

What percentage of students scored 8 or above?

Answer:

Students scoring 8: 5

Students scoring 9: 2

Total students scoring 8 or above = 5 + 2 = 7

Total number of students = 20

Percentage = (Number scoring 8 or above / Total number) $\times$ 100%

$$\text{Percentage} = (7 / 20) \times 100\% = 35\%$$

Question 7: Frequency Table with Intervals
(Continuous Data)

The heights (in cm) of 30 students are recorded as follows:

150, 152, 155, 157, 158, 160, 162, 163, 165, 167, 168, 170, 172, 173, 175, 177, 178, 180, 182, 183, 185, 187, 188, 190, 192, 193, 195, 197, 198, 200

Construct a grouped frequency table using intervals of 150–159, 160–169, 170–179, 180–189, 190–199, 200–209.

Answer:

Height Interval (cm)	Frequency
150–159	5
160–169	6
170–179	6
180–189	6
190–199	6
200–209	1
Total	30

Question 8: Proportion (Continuous Data)

Using the grouped frequency table from Question 7, what is the proportion of students whose heights are between 170 cm and 189 cm inclusive?

Answer:

- Students in 170–179 cm: 6
- Students in 180–189 cm: 6
- Total students in range = $6 + 6 = 12$
- Total students = 30

Proportion = Students in range / Total number

$$\text{Proportion} = 12 / 30 = 0.4$$

Question 9: Percentage (Continuous Data)

What percentage of students are taller than 189 cm?

Answer:

- Students in 190–199 cm: 6
- Students in 200–209 cm: 1
- Total students taller than 189 cm = $6 + 1 = 7$

- Total students = 30

Percentage = (Students taller than 189 cm / Total number) $\times$ 100%

$$\text{Percentage} = (7 / 30) \times 100\% \approx 23.33\%$$

Question 10: Frequency Table (Categorical Data)

A class has students from four different countries:

Country A: 10 students

Country B: 15 students

Country C: 5 students

Country D: 20 students

Construct a frequency table for the data.

Answer:

Country	Frequency
Country A	10
Country B	15
Country C	5
Country D	20
Total	50

Question 11: Proportion (Categorical Data)

Using the frequency table from Question 10, what is the proportion of students from Country D?

Answer:

- Number of students from Country D: 20
- Total students: 50

Proportion = Number from Country D / Total number

$$\text{Proportion} = 20 / 50 = 0.4$$

Question 12: Percentage (Categorical Data)

What percentage of students are from Country B or Country C?

Answer:

- Students from Country B: 15
- Students from Country C: 5
- Total from B or C = $15 + 5 = 20$
- Total students = 50

Percentage = (Students from B or C / Total number) $\times$ 100%

Percentage = $(20 / 50) \times 100\% = 40\%$

Question 13: Frequency Table (Numerical Data with Repetition)

The number of books read by each student in a month in a class of 25 students is as follows:

1, 2, 1, 3, 2, 2, 4, 1, 3, 2, 1, 5, 2, 3, 1, 2, 4, 3, 1, 2, 3, 1, 2, 1, 2

Construct a frequency table for the number of books read.

Answer:

Number of Books	Frequency
1	8
2	9
3	5
4	2
5	1
Total	25

Question 14: Proportion (Numerical Data with Repetition)

What is the proportion of students who read at least 3 books in the month?

Answer:

- Students who read 3 books: 5
- Students who read 4 books: 2
- Students who read 5 books: 1
- Total students reading at least 3 books = $5 + 2 + 1 = 8$
- Total students = 25

Proportion = Students reading ≥ 3 books / Total number

Proportion = $8 / 25 = 0.32$

Question 15: Percentage (Numerical Data with Repetition)

What percentage of students read fewer than 2 books?

Answer:

Students who read 1 book: 8

Total students = 25

Percentage = (Students reading < 2 books / Total number) $\times$ 100%

Percentage = $(8 / 25) \times 100\% = 32\%$