Statistics and Data Representation

M2/13/, 2/14, 2/15

Multiple Choice Questions

Choose the best answer for each question and click the corresponding letter.

1. A frequency table shows the number of books read by students over the summer:

- $0 - 2$ **books:** 8 students
- $3 - 5$ **books:** 14 students
- $6 - 8$ **books:** 10 students
- $9 - 11$ **books:** 3 students

How many students participated in the survey in total?

- A) 14
- B) 32
- C) 35
- D) 40

2. Using the frequency table from Question 1, what percentage of students read at least 6 books?

- A) 28.6%
- B) 37.1%
- C) 62.9%
- D) 13.0%

3. What is the main difference between a standard bar graph and a histogram?

- A) A bar graph has gaps between the bars for categorical data, while a histogram has touching bars for continuous numerical intervals.
- B) A bar graph displays percentages, while a histogram only displays fractions.
- C) A histogram is always drawn horizontally, while a bar graph is always drawn vertically.
- D) A bar graph uses a key, while a histogram does not have axes.

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4. A bar graph displays the favorite sports of Grade 8 students: Soccer (45), Basketball (30), Volleyball (25), and Track (20). If you compare the bar for Soccer to the bar for Track, how many times taller is the Soccer bar?

- A) 1.5 times taller
- B) 2 times taller
- C) 2.25 times taller
- D) 25 times taller

5. In a stem-and-leaf plot, the key states that 4 \7 = 47. What data value is represented by a stem of 12 and a leaf of 3?

- A) 12.3
- B) 15
- C) 123
- D) 312

6. Consider the following stem-and-leaf plot showing quiz scores (Key: 6 \5 = 65)

Stem	Leaf
6	5, 8
7	0, 2, 2, 9
8	1, 4, 6, 8, 8, 8
9	0, 3, 5

What is the mode of the quiz scores?

- A) 8
- B) 72
- C) 88
- D) 95

7. Using the stem-and-leaf plot from Question 6, what is the range of the quiz scores?

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- A) 30
- B) 25
- C) 35
- D) 95

8. Using the stem-and-leaf plot from Question 6, what is the median quiz score?

- A) 81
- B) 84
- C) 86
- D) 82.5

9. Which set of data corresponds to the stem-and-leaf plot below? (Key: 2 \1 = 2.1)

Stem	Leaf
1	4, 9
2	0, 5, 5
3	2

- A) $14, 19, 20, 25, 25, 32$
- B) $1.4, 1.9, 2.0, 2.5, 2.5, 3.2$
- C) $1.4, 1.9, 2.5, 3.2$
- D) $4.1, 9.1, 0.2, 5.2, 5.2, 2.3$

10. Why can a bar graph be misleading if the vertical axis starts at 50 instead of 0?

- A) It makes the data values look smaller than they actually are.
- B) It exaggerates the visual differences between the heights of the bars.
- C) It changes the mode of the data set.

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- D) It hides the labels on the horizontal axis.

11. A double bar graph compares the number of boys and girls in four school clubs. In the Chess Club, the bar for boys is at 16 and the bar for girls is at 12. In the Drama Club, the bar for boys is at 10 and the bar for girls is at 22. How many more total students are in the Drama Club than in the Chess Club?

- A) 4
- B) 6
- C) 10

12. Look at the incomplete frequency table below:

Score Interval	Frequency	Cumulative Frequency
$51 - 60$	4	4
$61 - 70$	7	11
$71 - 80$	x	20
$81 - 90$	6	26

What is the value of x, the frequency for the $71 - 80$ interval?

- A) 9
- B) 11
- C) 20
- D) 31

13. Using the back-to-back stem-and-leaf plot from Question 15, which class has a higher median score, and by how much?

- A) Class A, by 1 point
- B) Class B, by 1 point
- C) Class A, by 2 points
- D) Both classes have the exact same median.

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14. In a grouped frequency table, the intervals are written as $10 - 19$, $20 - 29$, $30 - 39$, and $40 - 49$. Why is it important that the intervals do not overlap (e.g., $10 - 20$ and $20 - 30$)?

- A) So that the bars on a bar graph have equal widths.
- B) So that each data value falls into one and only one interval.
- C) So that the mean can be calculated directly from the interval labels.
- D) Because frequency tables can only have four rows.

15. The mean of 5 numbers in a frequency table is 18. If four of the numbers are $14, 16, 20,$ and 22, what is the fifth number?

- A) 16
- B) 18
- C) 20
- D) 24

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