

Data Science Foundations for Students

Data Science · Answer Key · 12 Questions

1. Which type of graph is best used to show how a whole amount is divided into different parts?

- A) Bar graph
- B) Pie chart**
- C) Line graph
- D) Scatter plot

2. In a set of numbers, what is the 'range'?

- A) The middle number
- B) The most frequent number
- C) The difference between the highest and lowest values**
- D) The sum of all numbers

3. If you flip a fair coin 100 times, what does 'probability' tell us about the outcome?

- A) It will land on heads exactly 50 times
- B) It is equally likely to land on heads or tails for each flip**
- C) It will always land on tails more often
- D) The outcome depends on the person flipping

4. What is the term for a piece of information collected through observation or measurement?

- A) Data**
- B) Guess
- C) Theory
- D) Opinion

5. Which of these is considered a 'categorical' variable?

- A) Height in centimeters
- B) Number of siblings
- C) Favorite primary color**
- D) Temperature in degrees

6. What is the 'mode' of a data set?

- A) The largest value
- B) The value that appears most often**
- C) The average value
- D) The smallest value

7. What does a 'Line Graph' typically show that a 'Bar Graph' does not emphasize?

- A) Comparisons between separate groups
- B) Total counts of items
- C) Changes or trends over a period of time**
- D) The exact size of each category

8. When collecting data, what is a 'sample'?

- A) The entire population being studied
- B) A small subset of the population used to represent the whole**
- C) The final report written at the end
- D) The set of questions asked

9. What does a 'Pictograph' use to represent data?

- A) Mathematical symbols
- B) Lines and curves
- C) Pictures or icons**
- D) Shaded areas of a map

10. In a list of test scores, what is the 'median'?

- A) The middle value when the scores are ordered**
- B) The highest score achieved
- C) The sum of all scores divided by the number of tests
- D) The score that occurs most frequently

11. If a bar graph's bars are not touching, what does this usually indicate about the data?

- A) The data is continuous
- B) The data is grouped into distinct categories**
- C) The data is missing
- D) The data is increasing

12. Why do scientists use a 'tally chart'?

- A) To measure temperature
- B) To count the frequency of occurrences as they happen**
- C) To show the location of cities
- D) To predict the future