

Middle School Statistics & Probability Essentials

Statistics & Probability · Answer Key · 18 Questions

1. Which type of graph is most appropriate for displaying the relationship between two numerical variables, such as the height of a plant and the amount of sunlight it receives?

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

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

- A) The number that appears most frequently
- B) The sum of all numbers divided by the count of numbers
- C) The middle value when the numbers are arranged in order**
- D) The difference between the largest and smallest numbers

3. If you roll a standard six-sided die, what is the probability of rolling a number greater than 4?

- A) $\frac{1}{6}$
- B) $\frac{2}{6}$**
- C) $\frac{3}{6}$
- D) $\frac{4}{6}$

4. A survey asks 100 students their favorite colour. 40 chose blue, 30 chose red, 20 chose green, and 10 chose yellow. Which colour is the mode of this data set?

- A) Red
- B) Blue**
- C) Green
- D) Yellow

5. What does the range of a data set represent?

- A) The average value of the data
- B) The most frequent value in the data
- C) The difference between the highest and lowest values**
- D) The number of data points

6. If an event is impossible, what is its probability?

- A) 1
- B) 0.5
- C) 0**
- D) Cannot be determined

7. Which of the following best describes a histogram?

- A) A graph used to compare discrete categories
- B) A graph showing parts of a whole
- C) A graph showing the frequency distribution of continuous numerical data**
- D) A graph illustrating the relationship between two variables

8. If you flip a fair coin twice, what is the probability of getting two heads?

- A) $\frac{1}{2}$
- B) $\frac{1}{4}$**
- C) $\frac{3}{4}$
- D) 1

9. What is the mean of the following set of numbers: 5, 10, 15, 20?

- A) 10
- B) 12.5**
- C) 15
- D) 20

10. When drawing a single card from a standard deck of 52 playing cards, what is the probability of drawing a King?

- A) $\frac{1}{13}$
- B) $\frac{4}{52}$**
- C) $\frac{1}{52}$
- D) $\frac{4}{13}$

11. Which measure of central tendency is most affected by outliers (extremely high or low values)?

- A) Median
- B) Mode
- C) Mean**
- D) Range

12. A bag contains 3 red marbles and 7 blue marbles. If you pick one marble at random, what is the probability of picking a red marble?

- A) $\frac{3}{10}$**
- B) $\frac{7}{10}$
- C) $\frac{3}{7}$
- D) $\frac{1}{3}$

13. What does a probability of 1 indicate for an event?

- A) The event is impossible
- B) The event is unlikely
- C) The event is certain to happen**
- D) The event has a 50/50 chance

14. A pie chart is best used to represent:

- A) The trend of data over time
- B) The frequency of numerical data in intervals
- C) The comparison of discrete, independent categories as parts of a whole**
- D) The relationship between two numerical variables

15. If a data set has an even number of observations, the median is calculated by:

- A) Taking the average of the two middle values**
- B) Taking the first of the two middle values
- C) Taking the second of the two middle values
- D) Finding the most frequent value

16. What is the probability of an event that is certain to occur?

- A) 0
- B) 0.5
- C) 1**
- D) Cannot be determined

17. Which of the following is NOT a measure of central tendency?

- A) Mean
- B) Median
- C) Mode
- D) Standard Deviation**

18. If you are selecting one item from a group of 5 identical items, what is the probability of selecting any specific item?

- A) 0
- B) 1/5**
- C) 1/4
- D) 1