

Week-2 Introduction to Statistics

Answer the following questions

1. A sample in which every person, object, or event has an equal chance of being selected.
A. Random sample.
B. Biased sample.

Answer: A

2. When a sample does not accurately represent the population, it is a:
A. Unbiased sample
B. Biased sample

Answer: B

3. Carlos wants to know the favourite sport of people at his school so he asks his baseball team.
A. Unbiased Sample
B. Biased Sample

Answer: B

4. Larger random sample sizes are more representative of a population.
A. True
B. False

Answer: A

5. Biased questions lead people to answer a particular way.
A. True
B. False

Answer: A

6. A factory manufactures light bulbs. The factory currently has 300 boxes of light bulbs in its warehouse. To test the quality of bulbs, Alex decides to take out a sample of bulbs and test them to see if they work. Which surveying method will give him the least valid results?
A. selecting ten boxes randomly, mixing the bulbs of these boxes together and then selecting ten bulbs randomly
B. selecting ten boxes randomly and then selecting one bulb randomly from each box
C. selecting one bulb randomly from every tenth box
D. selecting one box randomly and then selecting all the bulbs from the box

Answer D

7. Which question is unbiased?

- a. Does the school board have the right to enforce a dress code?
- b. Do you think the mayor is doing a good job in spite of his questionable character?
- c. Do you prefer daytime or evening television programming?
- d. Do you think the government should be allowed to cut down trees willy-nilly to build a new highway?

Answer: C

9. Which question is biased?

- a. Do you prefer daytime or evening television programming?
- b. Should there be a school dress code?
- c. Do you prefer news or mindless sitcoms?
- d. Do you think a new highway should be built?

Answer : C

10) 53, 44, 10, 45, 59, 97, 77

Mean ____ Median ____ Mode _____ Range ____

Answer: Mean = 55 , Median = 53, Mode = None, Range= 87

11. Five houses on a street are sold in 2016. They sell for
£175,000 £184,000 £150,000 £201,000 £191,000

Calculate the mean price.

Answer: Mean = 180200

12. If the mean of numbers 28, x, 42, 78 and 104 is 62, what is the mean of 48, 62, 98, 124 and x ?

Answer : x = 58 , Mean = 78

13. A grade point average is a weighted average that gives greater weight to courses that earn more credits. Hailey's grade points are 4.0 in Chemistry, which is worth 4 credits, 3.5 in English, which is worth 3 credits, and 3.7 in Physics, which is worth 2 credits. What is Hailey's grade point average?

SOLUTION

Multiply each grade by its weight. Add the products and then divide by the sum of the weights.

$$4.0(4) + 3.5(3) + 3.7(2) = 33.9 = 3.7 - 6 \text{ ____}$$

$$4+3+2 \text{ 9}$$

Hailey's grade point average is approximately 3.77.

14. Calculate the mean, SS, variance, and standard deviation for the following sample:

6 8 4 3 5 7 4 3

Answer: The sample mean is 5, the SS is 24, the variance is 3.43, and the standard deviation is 1.85.

15. This set of data shows the numbers of customers who made purchases at a coffee shop each day in one month.

114, 142, 59, 122, 111, 128, 158, 79, 88, 107, 133, 131, 113, 152, 149, 99, 84, 112, 104, 109, 122, 131, 144, 155, 139, 142, 119, 80, 127, 140, 135

(a) Find the median for the set of data.

2. (b) Find the first quartile.
3. (c) Find the third quartile.
4. (d) What is the interquartile range?

Answers : a)122,(b)107,(c)140,(d)33