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ASSIGNMENT:-NORMAL DISTRIBUTION

Q1. You conduct a study on eye color and you question 550 people. 110 of them have brown eyes and 54% of them have blue eyes. What percentage of the people you questioned has blue or brown eyes? [Your answer should consist of just the number, no additional characters – so if you think the answer is 41% enter the number 41]

74%

64%

84%

54%

Q2. In which situation is a bar graph preferred over a pie chart?

- When there are some large categories in the data.
- When the number of categories in the data is low.
- When one of the categories in the data is really large.
- When the number of categories in the data is high.

Q3. Ten students completed an exam. Their scores were: 5, 7, 2, 1, 3, 4, 8, 8, 6, 6. What is the Median?

- 4
- 5.5

- 5
- 6.5

Q4. Ten students completed an exam. Their scores were: 5, 7, 2, 1, 3, 4, 8, 8, 6, 6. What is the interquartile range (IQR)?

- 4
- 5,5
- 5
- 8

Q5 If the mean and the standard deviation of a continuous random variable that is normally distributed are 20 and 5, respectively, find an interval that contains 68% of the distribution.

A. (18,24)
B. (15,25)
C. (12,25)
D. (10,30)

Q6. If the mean and the standard deviation of a continuous random variable that is normally distributed are 28 and 3 respectively, find an interval that contains 95% of the distribution.

A. (22,34)
B. (25,31)
C. (20,35)
D. (19,37)

7.A competency test has scores with a mean of 80 and a standard deviation of 10. A histogram of the data shows that the distribution is normal. Use the Empirical Rule to find the percentage of scores between 70 and 90.

A. 99.7%
B. 95%
C. 68%
D. 50%

8. The heights of adult women are normally distributed with a mean of 62.5 inches and standard deviation of 2.5 inches. Use the Empirical Rule to determine between what two heights 68% of adult women will fail.

A. (52.5,72.5)
B. (55,70)
C. (57.5,67.5)
D. (60,65)

9. The heights of adult women are normally distributed with a mean of 62.5 inches and standard deviation of 2.5 inches. Use the Empirical Rule to determine between what two heights 99.7% of adult women will fail.

A. (52.5,72.5)
B. (55,70)
C. (57.5,67.5)
D. (60, 65)

10. A machine produces electrical components.

99.7% of the components have lengths between 1.176 cm and 1.224 cm.
Assuming this data is normally distributed, what are the mean and standard deviation?
(A)Mean = 1.210 cm
S.D. = 0.008 cm
(B)Mean = 1.200 cm
S.D. = 0.004 cm
(C)Mean = 1.190 cm
S.D. = 0.008 cm
(D)Mean = 1.200 cm
S.D. = 0.008 cm

11, In a factory, the weight of the concrete poured into a mold by a machine follows a normal distribution with a mean of 1150 pounds and a standard deviation of 22 pounds. Approximately 95% of molds filled by this machine will hold weights in what interval?

answer choices

1084 to 1216 pounds

1106 to 1150 pounds

1106 to 1194 pounds

1128 to 1172 pounds

12. A 12 oz can of soda has a mean volume of 12 oz, with a standard deviation of .25 oz. How common are cans with less than 11.5 oz of soda? Calculate the probability.

answer choices

2.5%

.15%

2.35%

2.25%

13. At a local high school, GPA's are normally distributed with a mean of 2.9 and standard deviation of 0.6. What percentage of students at the high school have a GPA between 2.3 and 3.5?

answer choices

68%

99.7%

95%

84%

14. At a local high school, GPA's are normally distributed with a mean of 2.9 and standard deviation of 0.6. What is the GPA of the highest 2.5% of the students?

answer choices

4.1

4.1 or higher

4.7

4.5 or higher

15. The mean life of a tire is 30,000 km. The standard deviation is 2000 km.

Then, 68% of all tires will have a life between _____ km and _____ km.

16. You want to investigate whether households in California tend to have a higher income than households in Massachussetts. Which summary measure would you use to compare the two states?

(A)3rd quartile of household income

(B)median household income

(C)mean household income

18.Suppose all household incomes in California increase by 5%. How does that change the mean household income?

(A)cannot be determined from the information given

(B)the mean household income doesn't change

(C)the mean household income goes up by 5%

19.Suppose all household incomes in California increase by 5%. How does that change the median household income?

(A)cannot be determined from the information given

(B)median household income goes up by 5%

(C)the median household income doesn't change

20.Suppose all household incomes in California increase by $5,000. How does that change the mean household income?

(A)the mean household income goes up by $5,000

(B)the mean household income doesn't change

(C)cannot be determined from the information given

21.Suppose all household incomes in California increase by $5,000. How does that change the median household income?

(A)the median household income doesn't change

(B)cannot be determined from the information given

(C)the median household income goes up by $5,000

22.The median sales price for houses in a certain county during the last year was $342,000. What can we say about the percentage of sales represented by the houses that sold for more than $342,000?

(A)the houses that sold for more than $342,000 represent more than 50% of all sales

(B)the houses that sold for more than $342,000 represent exactly 50% of all sales

(C)the houses that sold for more than $342,000 represent less than 50% of all sales