

9) Which of the following sample types should you always regard as unreliable? 9) _____
A) stratified samples B) cluster samples
C) simple random samples D) voluntary response samples

Answer: D
Diff: 1 Type: MC

10) An independent variable can also be called a(n) 10) _____
A) outcome variable. B) suggestive variable.
C) free variable. D) explanatory variable.

Answer: D
Diff: 3 Type: BI

11) By visiting homes door-to-door, a municipality surveys all the households in 62 11) _____
randomly-selected neighborhoods to see how residents feel about a proposed property
tax increase. Identify the type of sample that is being used.
A) cluster sample B) voluntary response sample
C) stratified sample D) systematic sample

Answer: A
Diff: 1 Type: MC

12) Which of the following is the best description of a randomized experiment? 12) _____
A) an experiment in which the investigators are chosen at random
B) an experiment in which the experimental units are selected at random
C) an experiment in which the treatments are assigned randomly to experimental units
D) an experiment in which the outcomes are random

Answer: C
Diff: 1 Type: MC

13) Determine which of the following describes qualitative data. 13) _____
i). the volume of a shipping container, in gallons
ii). the name of the material from which the container is made
iii). the shape of the container
A) i, ii, and iii B) ii and iii only C) i and ii only D) i and iii only

Answer: B
Diff: 1 Type: MC

14) Give the boundaries of the given value. 14) _____
9.95
A) 9.9499-9.9501 B) 9.949-9.951
C) 9.9495-9.9505 D) 8.95-10.95

Answer: C
Diff: 1 Type: BI

21) Each value in a data set may be referred to as either a data value or a(n) _____. 21) _____
A) subdata B) datum C) atom D) point

Answer: B
Diff: 3 Type: BI

22) Determine which of the following describes quantitative data. 22) _____
i). the length of an object in feet
ii). the speed of an object in meters per second
iii). the number of objects that are blue
A) i, ii, and iii B) iii only C) i and ii only D) i only

Answer: A
Diff: 1 Type: MC

23) In an experimental study, manipulation of the _____ variable is studied to see if it leads to changes in the _____ variable. 23) _____
A) independent; dependent B) outcome; explanatory
C) input; output D) controlled; random

Answer: A
Diff: 3 Type: BI

24) Determine which of the following describes nominal data. 24) _____
i. Michaelangelo's sells small, medium, large, and jumbo pizzas.
ii. Michaelangelo's most-requested toppings are pepperoni, black olives, and mushrooms.
A) i only B) both i and ii C) ii only D) neither i nor ii

Answer: B
Diff: 1 Type: MC

25) An electronics manufacturer test every 100th cell phone to verify that it is functioning properly. Identify the kind of sample that is being used. 25) _____
A) systematic sample B) cluster sample
C) simple random sample D) stratified sample

Answer: A
Diff: 1 Type: MC

- 26) Which of the following best defines the relationship between confounding, dependent, and independent variables? 26) _____
- A) The confounding variable influences the independent variable, but has no effect on the dependent variable.
 - B) The influence of the confounding variable cannot be separated from the influence of the dependent variable.
 - C) The confounding variable may cause the dependent variable to act independently.
 - D) The confounding variable influences the dependent variable, but is not separated from the independent variable.

Answer: D
Diff: 3 Type: BI

- 27) Determining the number of people from the state of Alaska who voted for a Republican in the last election is an example of _____ measurement. 27) _____
- A) interval-level
 - B) nominal-level
 - C) percentage-level
 - D) ratio-level

Answer: D
Diff: 3 Type: BI

- 28) "Vitamin E is a proven antioxidant and may help in fighting cancer and heart disease." 28) _____
- Is there anything ambiguous about this claim?
- A) There is no proof that vitamin E is an antioxidant.
 - B) It is unclear what is meant by "cancer and heart disease".
 - C) Since the word *may* is used, there is no guarantee that the product will help fight cancer and heart disease.
 - D) There is nothing ambiguous about it.

Answer: C
Diff: 3 Type: BI

- 29) Determine which branch of statistics was used to make the following statement. In an online survey of 500 Virginia Tech students between spring 2010 and spring 2011, 31% said that they had missed class because of alcohol consumption. 29) _____
- A) inferential statistics
 - B) time series statistics
 - C) differential statistics
 - D) descriptive statistics

Answer: D
Diff: 3 Type: BI

- 30) The _____ level of measurement classifies data into categories that can be ranked; however, precise differences between the ranks do not exist. 30) _____
- A) cardinal
 - B) ordinal
 - C) nominal
 - D) interval

Answer: B
Diff: 3 Type: BI

- 31) Give the boundaries of the given value. 31) _____
31.4 yards
A) 31.35-31.45 pounds B) 31.4-32.4 pounds
C) 31.39-31.41 pounds D) 30.4-32.4 pounds

Answer: A

Diff: 1 Type: BI

- 32) Which one of the following data are continuous? 32) _____
A) the time remaining for an MP3 music download
B) the number of musicians performing in the MP3 file
C) the number of times the file has been downloaded
D) all of these represent continuous data

Answer: A

Diff: 1 Type: MC

- 33) What type of sampling is being employed if the country is divided into economic classes and a sample is chosen from each class to be surveyed? 33) _____
A) cluster sampling B) stratified sampling
C) systematic sampling D) random sampling

Answer: B

Diff: 3 Type: BI

- 34) The four basic methods used to obtain samples are: random, irregular, cluster, and stratified sampling. 34) _____
A) True B) False

Answer: B

Diff: 1 Type: MC

- 35) The variable of height is an example of a quantitative variable. 35) _____
A) True B) False

Answer: A

Diff: 3 Type: MC

- 36) Questioning every 14th customer leaving a theatre about the movie they had seen, would be an example of systematic sampling. 36) _____
A) True B) False

Answer: A

Diff: 3 Type: MC

- 42) _____ sampling is used when the population is large and it includes subjects residing over a large geographic area. 42) _____
 A) Stratified B) Cluster C) Random D) Convenient
 Answer: B
 Diff: 3 Type: BI
- 43) A _____ is a characteristic or attribute of a subject that can assume different values? 43) _____
 A) sample B) variable C) exponent D) datum
 Answer: B
 Diff: 1 Type: BI
- 44) In an experiment, subjects are put into two categories according to sex, and then each subject is randomly assigned a treatment . This is an example of... 44) _____
 A) confounding B) observational studies
 C) randomized blocking D) gender bias
 Answer: C
 Diff: 1 Type: MC
- 45) If a weather center monitors and calculates the average number of tornadoes that pass through Topeka, Kansas each year, what type of variable would they be investigating? 45) _____
 A) hypothesis variable B) isolated variable
 C) random variable D) controlled variable
 Answer: C
 Diff: 3 Type: BI
- 46) A middle school student passes out leaflets to the adults at a school function. The leaflets ask the recipient to indicate whether they believe in anthropogenic global warming. The bottom of the leaflet indicates that the completed leaflet should be returned to the student. Identify the kind of sample that is being used. 46) _____
 A) systematic sample B) stratified sample
 C) cluster sample D) sample of convenience
 Answer: D
 Diff: 1 Type: MC
- 47) Which branch of statistics would employ probability to predict how many miles one should be able to drive a 2000 Toyota Celica during its lifetime? 47) _____
 A) inferential statistics B) differential statistics
 C) descriptive statistics D) time series statistics
 Answer: A
 Diff: 3 Type: BI

48) In a true experimental study, the subjects should be assigned to groups randomly. If this is not possible and a researcher uses intact groups, they are performing a _____ 48) _____

- A) dependent study
- B) quasi-experimental study
- C) observational study
- D) convoluted study

Answer: B
Diff: 3 Type: BI

49) When rolling two six-sided dice, your total roll ranges from 2 (double ones) to 12 (double sixes). Characterize the nature of the roll total. 49) _____

- A) qualitative and discrete
- B) quantitative and continuous
- C) qualitative and continuous
- D) quantitative and discrete

Answer: D
Diff: 1 Type: MC

50) The amount of time needed to run the Boston marathon is an example of which type of variable? 50) _____

- A) discrete
- B) qualitative
- C) temporal
- D) continuous

Answer: D
Diff: 1 Type: BI

51) A _____ variable assumes values that can be counted. 51) _____

- A) enumerable
- B) discrete
- C) quantitative
- D) continuous

Answer: B
Diff: 3 Type: BI

52) Determine which branch of statistics was used to make the following statement. Based on a sample of 2739 respondents, it is estimated that pet owners spent a total of 14 billion dollars on veterinarian care for their pets. 52) _____

- A) time series statistics
- B) inferential statistics
- C) differential statistics
- D) descriptive statistics

Answer: D
Diff: 3 Type: BI

53) A(n) _____ makes it difficult to determine whether an experimental outcome is due to the applied treatment. 53) _____

- A) error
- B) counfounder
- C) uncooperative subject
- D) perplexer

Answer: B
Diff: 1 Type: MC

54) In a research study, it is always preferable for the researcher to carefully choose his participants rather than randomly select them from a suitable group. 54) _____
A) True B) False

Answer: B
Diff: 3 Type: MC

55) Statistics is the science of conducting studies to 55) _____
A) solve a system of equations.
B) collect, organize, summarize, analyze, and draw conclusions from data.
C) monitor, study, and report on a subject.
D) hypothesize, experiment, and form conclusions.

Answer: B
Diff: 1 Type: BI

56) Give the boundaries of the given value. 56) _____
45 feet
A) 44.9-45.1 feet B) 44.5-45.5 feet C) 45-46 feet D) 44-46 feet

Answer: B
Diff: 1 Type: BI

57) Based on her electric bills from last year, Mrs. Smith expects she will be paying \$75/month this year. This is an example of descriptive statistics. 57) _____
A) False B) True

Answer: A
Diff: 3 Type: MC

58) A pollster randomly samples 161 Democrats, 145 Republicans and 18 Independents (all registered voters) in Metro City and asks each poll participant which mayorial candidate he or she prefers. Identify the kind of sample that the pollster is using. 58) _____
A) stratified sample B) voluntary response sample
C) sample of convenience D) cluster sample

Answer: A
Diff: 1 Type: MC

59) If a researcher manipulates one of the variables and tries to determine how the manipulation influences other variables, the researcher is conducting a(n) 59) _____
A) experimental study. B) independent study.
C) observational study. D) confounding study.

Answer: A
Diff: 3 Type: BI

- 60) In the 1980s, a study linked coffee to a higher risk of heart disease and pancreatic cancer. In the early 1990s, studies showed that drinking coffee posed minimal health threats. However, in 1994, a study showed that pregnant women who drank 3 or more cups of tea daily may be at risk for miscarriage. In 1998, a study claimed that women who drank more than a half-cup of caffeinated tea every day may actually increase their fertility. In 1998, a study showed that over a lifetime, a few extra cups of coffee a day can raise blood pressure, heart rate, and stress. Which of the following reasons could explain why the studies are conflicting? 60) _____
- A) The sample size of the studies are too small.
 - B) No control group was used.
 - C) The researchers fabricated the studies.
 - D) The effect of caffeine changes over time.

Answer: A

Diff: 3 Type: MC

- 61) The names of all 93 students in a professor's class are written on identical slips of paper, and the slips are placed into a large glass jar. Then, the professor selects 14 random slips from the jar. Identify the kind of sample that is being used. 61) _____
- A) simple random sample
 - B) cluster sample
 - C) sample of convenience
 - D) systematic sample

Answer: A

Diff: 1 Type: MC

- 62) Which one of the following data are discrete? 62) _____
- A) the latitude and longitude of a boat at sea
 - B) the latitude and longitude of the boat's port of departure
 - C) the number of crew members on the boat
 - D) the speed of the boat's propeller, in revolutions per minute

Answer: C

Diff: 1 Type: MC

- 63) The number of birds in a tree is an example of a continuous variable. 63) _____
- A) True
 - B) False

Answer: B

Diff: 1 Type: MC

- 64) "Just one capsule of our product can provide 24 hours of acid control." 64) _____

What needs to be more clearly defined in this statement?

- A) What is meant by "24 hours of acid control"?
- B) What is the effect of more than one capsule?
- C) Does the product actually work?
- D) How much is "one capsule"?

Answer: A

Diff: 3 Type: BI

- 65) A dependent variable can also be referred to as an outcome variable. 65) _____
A) False B) True
Answer: B
Diff: 1 Type: MC
- 66) A person's hair color would be an example of a quantitative variable. 66) _____
A) False B) True
Answer: A
Diff: 3 Type: MC
- 67) If you were told that four students from a class of twenty were questioned for a poll about study habits, this would be an example of _____. 67) _____
A) cluster sampling B) systematic sampling
C) random sampling D) stratified sampling
Answer: A
Diff: 3 Type: BI
- 68) Classifying the fruit in a basket as apple, orange, or banana, is an example of the _____ level of measurement? 68) _____
A) ratio B) ordinal C) nominal D) interval
Answer: C
Diff: 3 Type: BI
- 69) What level of measurement would be applied when doing a survey on the average American's shoe size? 69) _____
A) the ratio level of measurement B) the nominal level of measurement
C) the ordinal level of measurement D) the interval level of measurement
Answer: D
Diff: 3 Type: BI
- 70) Quantitative data can be further classified as continuous or nonsequential. 70) _____
A) True B) False
Answer: B
Diff: 1 Type: MC
- 71) Give the boundaries of the given value. 71) _____
13 quarts
A) 13-14 quarts B) 12.5-13.5 quarts
C) 12-14 quarts D) 12.9-13.1 quarts
Answer: B
Diff: 1 Type: BI

- 72) What is meant by a biased sample? 72) _____
- A) A biased sample is a sample selected to reach a pre-determined conclusion.
 - B) A biased sample is a sample created using a weighted die.
 - C) A biased sample is a sample that is not representative of the population.
 - D) A biased sample is a sample that doesn't have a uniform distribution of outcomes.

Answer: C

Diff: 3 Type: BI

- 73) Determine which of the following describes quantitative data. 73) _____
- i). the name of a chemical sample
 - ii). the mass of a chemical sample
 - iii). the color of a chemical sample
- A) ii only B) i and ii only C) i, ii, and iii D) i only

Answer: A

Diff: 1 Type: MC

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 74) Statistics are used to analyze the results of surveys. It is important to understand the terms and concepts so that one can understand exactly what is being represented (or misrepresented) by a given statement. 74) _____

Answer: True False

Diff: 3 Type: TF

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 75) _____ is a decision-making process for evaluating claims about a population, based on information obtained from samples. 75) _____
- A) Forecasting
 - B) Hypothesis testing
 - C) Descriptive statistics
 - D) Inferential statistics

Answer: B

Diff: 3 Type: BI

- 76) Give the boundaries of the given value. 76) _____
- 29.75 pounds
- A) 28.75-30.75 pounds
 - B) 29.75-30.75 pounds
 - C) 29.745-29.755 pounds
 - D) 29.749-29.751 pounds

Answer: C

Diff: 1 Type: BI

- 77) Rating a restaurant by a number of stars is an example of an ordinal level of measurement. 77) _____
- A) False
 - B) True

Answer: B

Diff: 3 Type: MC

- 78) Determine which of the following describes nominal data. 78) _____
- i. My favorite days of the week are Friday, Saturday, and Tuesday.
 - ii. My favorite day of the week is Friday, my second-favorite is Saturday, and third-favorite is Tuesday.
- A) neither i nor ii B) i only C) ii only D) both i and ii

Answer: B
Diff: 1 Type: MC

- 79) According to a pilot study of 25 people conducted at a major university, daily doses of a compound called arabinogalactan over a period of 6 months resulted in a significant increase in the beneficial lactobacillus species of bacteria. Why can't it be concluded that the compound is beneficial for the majority of people? 79) _____
- A) Only 25 people were used in the study.
 - B) The study did not last long enough.
 - C) It is not known if lactobacillus is beneficial to everybody.
 - D) The people studied were not selected randomly.

Answer: A
Diff: 3 Type: BI

- 80) An advertisement for a motorcycle states that it is 20% more powerful. This is an example of _____. 80) _____
- A) detached statistics B) suspect samples
 - C) ambiguous averages D) changing the subject

Answer: A
Diff: 3 Type: BI

- 81) In a randomized experiment, if there are large differences in outcomes among the treatment groups, we can conclude that the differences are due to _____. 81) _____
- A) the treatments B) random luck
 - C) experimental error D) deliberate data manipulation

Answer: A
Diff: 1 Type: MC

- 82) Determine which branch of statistics was used to make the following statement. In 2025, the world population is predicted to be 8 billion people. 82) _____
- A) inferential statistics B) descriptive statistics
 - C) differential statistics D) time series statistics

Answer: A
Diff: 3 Type: BI

83) What level of measurement allows for the ranking of data, a precise difference between units of measure, and also includes a true zero? 83) _____
A) ordinal B) nominal C) ratio D) interval

Answer: C
Diff: 3 Type: BI

84) Give the boundaries of the given value. 84) _____
6.2 millimeters
A) 5.2-7.2 millimeters B) 6.19-6.21 millimeters
C) 6.2-7.2 millimeters D) 6.15-6.25 millimeters

Answer: D
Diff: 1 Type: BI

85) Determine which of the following describes ordinal data. 85) _____
i. In the horse race, Betty's Girl won, Mr. Ed placed, and Wabash showed.
ii. In the horse race, I bet on Betty's Girl to win, Mr. Ed to place, and Wabash to show.
A) both i and ii B) i only C) ii only D) neither i nor ii

Answer: A
Diff: 1 Type: MC

86) Variables with values that are determined by chance are called _____. 86) _____
A) specialized. B) random variables.
C) erratic variables. D) inconsistent variables.

Answer: B
Diff: 1 Type: BI

Answer Key

Testname: CH1

- 1) B
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- 2) A
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- 3) A
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Topic:
- 4) A
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- 5) A
Diff: 1 Page Ref:
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- 6) B
Diff: 3 Page Ref:
Topic:
- 7) A
Diff: 3 Page Ref:
Topic:
- 8) C
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- 9) D
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- 10) D
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- 11) A
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- 12) C
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- 13) B
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- 15) B
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- 16) A
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Answer Key

Testname: CH1

- 17) B
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- 18) C
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- 19) D
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- 20) C
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- 21) B
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- 22) A
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- 25) A
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- 28) C
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- 29) D
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- 30) B
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- 31) A
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- 32) A
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Answer Key

Testname: CH1

- 33) B
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- 34) B
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- 35) A
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- 36) A
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- 37) B
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- 40) D
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- 45) C
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- 46) D
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- 47) A
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- 48) B
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Answer Key

Testname: CH1

- 49) D
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- 50) D
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- 51) B
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- 52) D
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- 63) B
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- 64) A
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Answer Key

Testname: CH1

- 65) B
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- 66) A
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- 67) A
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- 68) C
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- 69) D
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- 70) B
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- 71) B
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- 72) C
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- 73) A
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- 74) TRUE
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- 75) B
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- 76) C
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- 77) B
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- 78) B
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- 79) A
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- 80) A
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Answer Key

Testname: CH1

81) A

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Topic:

82) A

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83) C

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Topic:

84) D

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Topic:

85) A

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Topic:

86) B

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