Discovering Statistics Using IBM SPSS Statistics 6th edition Field Test Bank

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1. Twenty-one cats were given 300 g of tuna each. The time in seconds was measured until they had eaten all of the tuna. Compute the **median** tuna eating time.

16, 18, 18, 22, 22, 23, 23, 24, 26, 29, 32, 34, 34, 36, 36, 42, 43, 46, 46, 49, 57

Answer choices

A. 32 seconds
B. 22.5 seconds
C. 42.5 seconds
D. 20 seconds

Show answer: 32 seconds

2. A researcher decides to measure the effect of sugar consumption on reaction time when playing First Person Shooter (FPS) video games. The research has the same participants come in on two different days. On one of the days (randomly selected) the participant will get a glass of sugary fruit drink and then play the game. On the other day, the participant will get a glass of sugar-free fruit drink and then play the game. This is an example of:

Answer choices

A. A within-subject design
B. A between-subject design
C. An observational design
D. A silly design

Show answer: A within-subject design

3. An experimenter measured 30 children's IQ. He then rank-ordered the children and assigned them a score from 30 (most intelligent) to 1 (least intelligent) to create a new variable. Does this new variable consist of:

Answer choices

A. Nominal data
B. Interval data
C. Ratio data
D. Ordinal data

Show answer: Ordinal data

4. When items on a questionnaire appear to correspond to the construct that the questionnaire claims to measure it is said to have:

Answer choices

A. Factorial validity
B. Ecological validity
C. Content validity
D. Criterion validity

Show answer: Content validity

5. Variation due to an experimental intervention is known as:

Answer choices

A. Unsystematic variation
B. Systematic variation
C. Homogeneous variance
D. Residual variance

Show answer: Systematic variation

6. Which of the following data summaries would be *least* impacted by a very large outlier value?

Answer choices

A. The mean
B. The standard deviation
C. The median
D. The range

Show answer: The median

Chapter 1: Why is My Evil Lecturer Forcing Me to Learn Statistics?

1. A café owner decided to calculate how much revenue he gained from lattes each month. What type of variable would the amount of revenue gained from lattes be?

a. Categorical
b. Discrete
c. Nominal
d. Continuous
Ans: D

2. A café owner wanted to compare how much revenue he gained from lattes across different months of the year. What type of variable is 'month'?

a. Continuous
b. Categorical
c. Dependent
d. Interval
Ans: B

3. Which of the following best describes a confounding variable?

a. A variable that affects the outcome being measured as well as, or instead of, the independent variable
b. A variable that is manipulated by the experimenter
c. A variable that has been measured using an unreliable scale
d. A variable that is made up only of categories
Ans: A

4. If a test is valid, what does this mean?

a. The test will give consistent results.
b. The test has internal consistency.
c. The test measures a useful construct or variable.
d. The test measures what it claims to measure.
Ans: D

5. When questionnaire scores predict or correspond with external measures of the same construct that the questionnaire measures the questionnaire is said to have:

a. Ecological validity
b. Content validity
c. Criterion validity
d. Factorial validity
Ans: C

6. When the results of an experiment can be applied to real-world conditions, that experiment is said to have:

a. Ecological validity
b. Factorial validity
c. Content validity
d. Criterion validity
Ans: A

7. A variable manipulated by a researcher is known as:

a. A discrete variable
b. An independent variable
c. A dependent variable
d. A confounding variable
Ans: B

8. A variable that measures the effect that manipulating another variable has is known as:

a. A predictor variable
b. An independent variable
c. A dependent variable
d. A confounding variable
Ans: C

9. A predictor variable is another name for:

a. An independent variable
b. A dependent variable
c. A confounding variable
d. A discrete variable
Ans: A

10. The discrepancy between the numbers used to represent something that we are trying to measure and the actual value of what we are measuring is called:

a. Reliability
b. The 'fit' of the model
c. Variance
d. Measurement error
Ans: D

11. What kind of variable is IQ, measured by a standard IQ test?

a. Nominal
b. Continuous
c. Categorical
d. Discrete
Ans: B

12. A frequency distribution in which low scores are most frequent (i.e., bars on the graph are highest on the left-hand side) is said to be:

a. Positively skewed
b. Leptokurtic
c. Platykurtic
d. Negatively skewed
Ans: A

13. A frequency distribution in which high scores are most frequent (i.e., bars on the graph are highest on the right-hand side) is said to be:

a. Leptokurtic
b. Platykurtic
c. Negatively skewed
d. Positively skewed
Ans: C

14. A frequency distribution in which there are too many scores at the extremes of the distribution said to be:

a. Positively skewed
b. Leptokurtic
c. Negatively skewed
d. Platykurtic
Ans: D

15. A frequency distribution in which there are too few scores at the extremes of the distribution said to be:

a. Leptokurtic
b. Positively skewed
c. Platykurtic
d. Negatively skewed
Ans: A

16. Which of the following is designed to compensate for practice effects?

a. Giving participants a break between tasks
b. A control condition
c. Counterbalancing
d. A repeated-measures design
Ans: C

17. Variation due to variables that have not been measured is known as:

a. Homogenous variance
b. Systematic variation
c. Residual variance
d. Unsystematic variation
Ans: D

18. The purpose of a control condition is to:

a. Rule out a *tertium quid*.
b. Allow inferences about cause.
c. Control for participant characteristics.
d. Show up relationships between predictor variables.
Ans: B

19. If the scores on a test have a mean of 26 and a standard deviation of 4, what is the *z*-score for a score of 18?

a. 2
b. –1.41
c. –2
d. 11
Ans: C

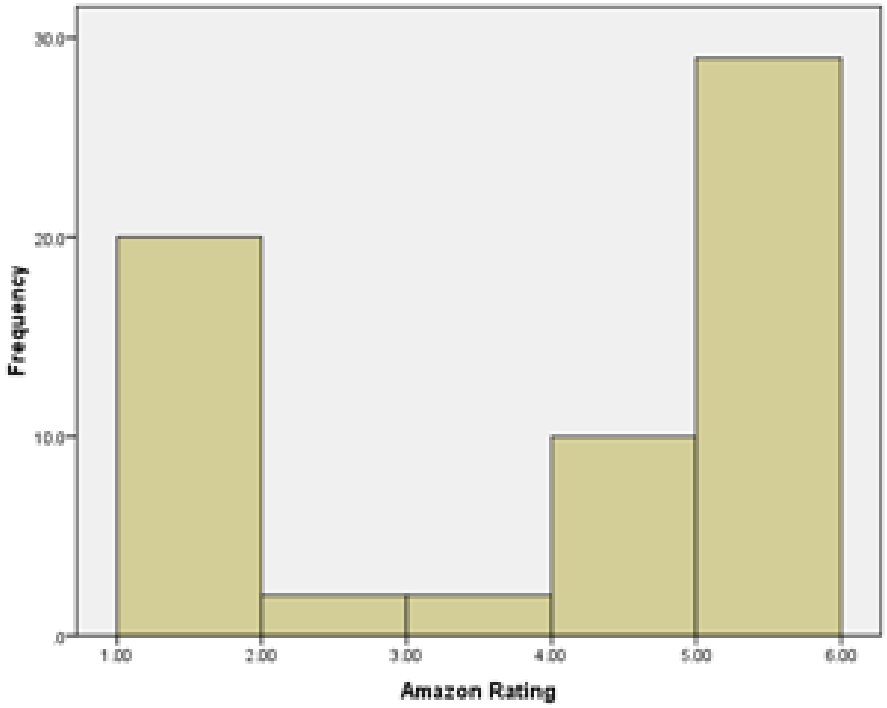
20. What is a scientific journal?

a. A collection of peer-reviewed articles written by scientists
b. A notebook kept by scientists containing important details of all their own experimental research for future reference
c. A collection of articles written by scientists that have not yet been reviewed by other scientists in the field
d. A piece of scientific research that has not yet been published
Ans: A

21. The standard deviation is the square root of the:

a. Coefficient of determination
b. Sum of squares
c. Range
d. Variance
Ans: D

22. Below is a histogram of ratings of Britney Spears's CD, *Britney*. What can we say about the data from this histogram?



a. The data are leptokurtic.
b. The modal score is 5.
c. The data are normally distributed.
d. The median rating was 2.
Ans: B

23. What is the standard deviation?

a. A measure of the dispersion or spread of data around the mean
b. A measure of the relationship between two variables
c. The variance squared
d. The degree to which scores cluster at the ends of the distribution
Ans: A

24. Complete the following sentence:

A small standard deviation (relative to the value of the mean itself)

a. indicates that the mean is a poor fit of the data.
b. indicates that you should analyse your data with a non-parametric test.
c. indicates that data points are close to the mean (i.e., the mean is a good fit of the data).
d. indicates that the data points are distant from the mean.
Ans: C

25. Complete the following sentence:

A large standard deviation (relative to the value of the mean itself)

a. indicates that the data points are close to the mean.
b. indicates that the mean is a good fit of the data.

c. indicates that you should analyse your data with a parametric test.
d. indicates that the data points are distant from the mean (i.e., the mean is a poor fit of the data).
Ans: D

Discovering Statistics Using IBM SPSS Statistics (6th)

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Total Questions: 98

Pool 1

Multiple Choice (25)

Q1. *[Multiple Choice]*

A café owner decided to calculate how much revenue he gained from lattes each month. What type of variable would the amount of revenue gained from lattes be?

a) Categorical
b) Discrete
c) Nominal
d) Continuous ✓ correct

Q2. *[Multiple Choice]*

A café owner wanted to compare how much revenue he gained from lattes across different months of the year. What type of variable is 'month'?

a) Continuous
b) Categorical ✓ correct
c) Dependent
d) Interval

Q3. *[Multiple Choice]*

Which of the following best describes a confounding variable?

a) A variable that affects the outcome being measured as well as, or instead of, the independent variable ✓ correct
b) A variable that is manipulated by the experimenter
c) A variable that has been measured using an unreliable scale
d) A variable that is made up only of categories

Q4. *[Multiple Choice]*

If a test is valid, what does this mean?

a) The test will give consistent results.
b) The test has internal consistency.
c) The test measures a useful construct or variable.
d) The test measures what it claims to measure. ✓ correct

Q5. *[Multiple Choice]*

When questionnaire scores predict or correspond with external measures of the same construct that the questionnaire measures the questionnaire is said to have:

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b) Content validity
c) Criterion validity ✓ correct
d) Factorial validity

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Q6. *[Multiple Choice]*

When the results of an experiment can be applied to real-world conditions, that experiment is said to have:

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b) Factorial validity
c) Content validity
d) Criterion validity

Q7. *[Multiple Choice]*

A variable manipulated by a researcher is known as:

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b) An independent variable ✓ correct
c) A dependent variable
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Q8. *[Multiple Choice]*

A variable that measures the effect that manipulating another variable has is known as:

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b) An independent variable
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A predictor variable is another name for:

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a) Reliability
b) The 'fit' of the model
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What kind of variable is IQ, measured by a standard IQ test?

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b) Continuous ✓ correct
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d) Positively skewed

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The purpose of a control condition is to:

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Q19. *[Multiple Choice]*

If the scores on a test have a mean of 26 and a standard deviation of 4, what is the*z*-score for a score of 18?

a) 2
b) –1.41
c) –2 ✓ correct
d) 11

Q20. *[Multiple Choice]*

What is a scientific journal?

a) A collection of peer-reviewed articles written by scientists ✓ correct

b) A notebook kept by scientists containing important details of all their own experimental research for future reference

c) A collection of articles written by scientists that have not yet been reviewed by other scientists in the field

d) A piece of scientific research that has not yet been published

Q21. *[Multiple Choice]*

The standard deviation is the square root of the:

a) Coefficient of determination

b) Sum of squares

c) Range

d) Variance ✓ correct

Q22. *[Multiple Choice]*

Below is a histogram of ratings of Britney Spears's CD,*Britney*. What can we say about the data from this histogram?

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d) The median rating was 2.

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b) A measure of the relationship between two variables ✓ correct

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Q24. *[Multiple Choice]*

Complete the following sentence:
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b) indicates that you should analyse your data with a non-parametric test.

c) indicates that data points are close to the mean (i.e., the mean is a good fit of the data). ✓ correct

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Q25. *[Multiple Choice]*

Complete the following sentence:
A large standard deviation (relative to the value of the mean itself)

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b) indicates that the mean is a good fit of the data.

c) indicates that you should analyse your data with a parametric test.

d) indicates that the data points are distant from the mean (i.e., the mean is a poor fit of the data). ✓ correct

Pool 2

Multiple Choice (15)

Q26. *[Multiple Choice]*

The standard deviation is the square root of?

a) The coefficient of determination
b) Sum of squares
c) Variance ✓ correct
d) Range

Q27. *[Multiple Choice]*

A frequency distribution in which low scores are most frequent (i.e. bars on the graph are highest on the left-hand side) is said to be.?

a) Positively skewed ✓ correct
b) Leptokurtic
c) Platykurtic
d) Negatively skewed

Q28. *[Multiple Choice]*

If research suggests that the mean number of insurance quotations a person makes in a year is 26 with a standard deviation of 4, what is the*z*-score for a score of 18?

a) -2 ✓ correct
b) 11
c) 2
d) -1.41

Q29. *[Multiple Choice]*

Which of the following is true about a 95% confidence interval of the mean for a sample of grocery shoppers rating their favourite store?

a) 95 out of 100 sample means will fall within the limits of the confidence interval.
b) There is a 95% chance that the population mean will fall within the limits of the confidence interval. ✓ correct
c) 95 out of 100 population means will fall within the limits of the confidence interval.
d) There is a .05 probability that the population mean falls within the limits of the confidence interval

Q30. *[Multiple Choice]*

What does a significant test statistic tell us?

a) There is an important effect.
b) The null hypothesis is false.
c) There is an effect in the population of sufficient magnitude to be scientifically interesting. ✓ correct
d) All of the above.

Q31. *[Multiple Choice]*

A Type I error is when?

a) We conclude that there is a meaningful effect in the population when in fact there is not. ✓ correct
b) We conclude that there is not a meaningful effect in the population when in fact there is.
c) We conclude that the test statistic is significant when in fact it is not.
d) The data we have typed into SPSS is different than the data collected.

Q32. *[Multiple Choice]*

If we calculated that the correlation (i.e. the effect size) of company size and sales revenue for various organizations was $r = .42$, which expression would best describe this relationship?

a) Small
b) Small to medium
c) Large
d) Medium to large ✓ correct

Q33. *[Multiple Choice]*

Which of these statements about statistical power is not true?

a) Power is the ability of a test to detect an effect.
b) We can use power to determine how big a sample is required to detect an effect of a certain size.
c) Power is linked to the probability of making a Type I error.
d) All of the above are true. ✓ correct

Q34. *[Multiple Choice]*

What is a significance level?

a) The level at which statistics finally become meaningful
b) The impact that reporting statistics incorrectly could have.
c) A pre-set level of probability what the results are correct
d) A pre-set level of probability at which it will be accepted that results are due to chance (or not). ✓ correct

Q35. *[Multiple Choice]*

What is the conventional level of probability that is often accepted when conducting statistical tests in social science and business?

a) 0.1
b) 0.05 ✓ correct
c) 0.5
d) 0.001

Q36. *[Multiple Choice]*

A null hypothesis.

a) States that the experimental treatment will have an effect.
b) Is rarely used in experiments.
c) Predicts that an experimental treatment will have no effect on a dependent variable of interest. ✓ correct
d) None of the above.

Q37. *[Multiple Choice]*

Which of the following terms best describes the sentence: ‘organizations with employee training programmes will not employ fewer men or women’.

a) A directional hypothesis
b) An operational definition
c) A null hypothesis
d) A non-directional hypothesis ✓ correct

Q38. *[Multiple Choice]*

The aim of experimental research is to?

a) Be a phenomenon
b) Cause a phenomenon
c) Investigate what caused a phenomenon ✓ correct
d) Prevent a phenomenon

Q39. *[Multiple Choice]*

'Reducing the advertising budget will reduce short-term sales performance'. State the direction of this hypothesis.

a) Directional ✓ correct
b) Non-directional
c) Both
d) Not enough information given.

Q40. *[Multiple Choice]*

Which of these statements is correct about one- and two-tailed tests?

a) A statistical model that tests a directional hypothesis is called a one-tailed test, whereas one testing a non-directional hypothesis is called a two-tailed test ✓ correct
b) A statistical model that tests a non-directional hypothesis is called a one-tailed test, whereas one testing a directional hypothesis is called a two-tailed test.
c) A two-tailed test is a more powerful test than a one-tailed test.
d) A one-tailed test is a more accurate test than a two-tailed test.

Pool 3

Multiple Choice (24)

Q41. *[Multiple Choice]*

Which of the following is an example of a quantitative research method?

a) Systematic reviews
b) Blog research
c) Visual methodologies
d) Statistical and correlational analysis ✓ correct

Q42. *[Multiple Choice]*

Which of the following is a common example of self-reporting measurement error?

a) Lying on a questionnaire ✓ correct
b) Calculator malfunction
c) Miscalibrated scales
d) Dud batteries in a stopwatch

Q43. *[Multiple Choice]*

Which of the following is an effective data collection tool in educational research?

a) Baseline surveys ✓ correct
b) Acting
c) Visiting a solicitor
d) Brushing your teeth

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Q44. *[Multiple Choice]*

SPSS is a computer software program used for..?

a) Doing your work for you

b) Analysing data sets ✓ correct

c) Checking football scores

d) Voting on *The X Factor*

Q45. *[Multiple Choice]*

An independent variable is:

a) A variable thought to predict an outcome variable

b) An outcome

c) Synonymous with a dependent variable

d) A variable thought to be the cause of some effect ✓ correct

Q46. *[Multiple Choice]*

Analysing data is which stage in the five-stage model of research?

a) 1st

b) 2nd

c) 4th

d) 5th ✓ correct

Q47. *[Multiple Choice]*

What does this symbol mean? √

a) Divide by

b) 2+2=4

c) Square root ✓ correct

d) Equal to

Q48. *[Multiple Choice]*

What is the answer to the following equation? √1999 =

a) 44.71 ✓ correct

b) 43.07

c) 45.98

d) 44.00

Q49. *[Multiple Choice]*

Two distributions(D_1 and D_2) are plotted onto the same graph. D_1 is right skewed, D_2 is left skewed. The mean of D_1 is lower than D_2. Which of the following statements is incorrect?

a) The mean of D_2 is higher than the median of D_2.

b) The mean of D_2 is lower than the median of D_1.

c) The median of D_1 is the same as the mean of D_2.

d) All of the above ✓ correct

Q50. *[Multiple Choice]*

Which of the following is a brief definition of 'contiguity'?

a) Cause and effect must occur close together in time, ✓ correct

b) The effect will occur before the cause,

c) Cause and effect can occur randomly,

d) Effect never determines cause,

Q51. *[Multiple Choice]*

Your seminar tutor congratulates all students for working hard on their statistics homework. This is an example of?

a) No reinforcement
b) Negative reinforcement
c) Positive reinforcement ✓ correct
d) Data collection

Q52. *[Multiple Choice]*

Negative reinforcement is a type of?

a) Manipulation ✓ correct
b) Ignorance
c) Refusal
d) Variation

Q53. *[Multiple Choice]*

A sample of size n is used to estimate the confidence interval for a proportion. Upon review, you consider the standard deviation too large. If you want to reduce your standard deviation so that it is a tenth (1/10) of the original size, what size sample do you need?

a) $10n$
b) $\mathbf{100n}$ **✓ correct**
c) $1000n$
d) $10{,}000n$

Q54. *[Multiple Choice]*

A randomized controlled trial (RCT) is often used to test?

a) Efficacy of various types of intervention within a patient population ✓ correct
b) Popularity of types of music
c) Methods of data collection
d) Versions of SPSS software

Q55. *[Multiple Choice]*

The random allocation to groups of participants in an RCT occurs?

a) Before assessment of eligibility and recruitment
b) After assessment of eligibility and recruitment but before implementation of the intervention ✓ correct
c) After both assessment of eligibility and recruitment and implementation of the intervention
d) At any point

Q56. *[Multiple Choice]*

The two most important sources of systematic variation in RCTs are?

a) Counterbalancing and randomization
b) Systematic and unsystematic variation
c) Practice effects and boredom effects ✓ correct
d) Frequency distributions and positive skews

Q57. *[Multiple Choice]*

You begin a study with primary school children. You show them a box which contains 3 yellow, 2 black, 4 white and 3 clear buttons. Two buttons are taken one after the other at random from the box. What is the probability that both buttons are black?

a) 1/6
b) 1/16
c) 1/60
d) 1/66 ✓ correct

Q58. *[Multiple Choice]*

You ask a participant in a study to roll a die, and to keep rolling until they roll either a 5 or a 6. What is the variance of the distribution of the number of rolls required?

a) 6 ✓ correct
b) 3
c) 1/3
d) 1/18

Q59. *[Multiple Choice]*

The median is always?

a) The middle score when results are ranked in order of magnitude ✓ correct
b) The most frequently occurring value in a data set
c) The same as the mean
d) Never the same as the mode

Q60. *[Multiple Choice]*

You ask a class of 15 students to tell you the number of people who follow them on Twitter. They give their answers as 10, 27, 145, 70, 8, 23, 2, 0, 66, 201, 12, 5, 9, 34, 20. Calculate the median number of followers.

a) 0
b) 12
c) 20 ✓ correct
d) 145

Q61. *[Multiple Choice]*

You ask a class of 15 students to tell you the number of people who follow them on Twitter. They give their answers as 10, 27, 145, 70, 8, 23, 2, 0, 66, 201, 12, 5, 9, 34, 20.Calculate the mean number of followers to 2 decimal places.

a) 13.42
b) 42.13 ✓ correct
c) 24.31
d) 34.12

Q62. *[Multiple Choice]*

How is a null hypothesis denoted?

a) H_0 ✓ correct
b) H_1
c) H_2
d) H_3

Q63. *[Multiple Choice]*

Which of the following are true statements?
I. All bell-shaped distributions are symmetric.
II. Bar charts are useful to describe quantitative data.
III. Cumulative frequency plots are useful to describe quantitative data.

a) I only
b) I and II only
c) I and III only ✓ correct
d) II and III only

Q64. *[Multiple Choice]*

A data set is usually collated in?

a) Tabular form ✓ correct
b) Histograms
c) Pie charts
d) A Word document

Multiple Answer (1)

Q65. *[Multiple Answer]*

A repeated-measures design uses?

a) Different subject groups throughout ✓ correct
b) The same subject group throughout ✓ correct
c) Mixed subject groups throughout ✓ correct
d) No subject groups ✓ correct

Pool 4

Multiple Choice (5)

Q66. *[Multiple Choice]*

Quantitative research involves the use of which of the following?

a) Language.
b) Letters.
c) Numbers. ✓ correct
d) Description.

Q67. *[Multiple Choice]*

The research process is comprised of five stages. Which of the following is*not* one of those stages?

a) Data collection.
b) Generate theory.
c) Analysis.
d) Dispersion. ✓ correct

Q68. *[Multiple Choice]*

Looking at the distribution of data on the bar chart below, how best can it be described?

Source: http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=955

a) Normally distributed.
b) Negatively skewed. ✓ correct
c) Positively skewed.
d) Leptokurtic.

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Q69. *[Multiple Choice]*

What does the data in the chart demonstrate?

a) The incidence of cancer is highest among women aged 55–59.
b) The incidence of childhood cancer is highest in girls.
c) Cancer affects everyone.
d) A higher incidence of cancer occurs in men across most age groups. ✓ correct

Q70. *[Multiple Choice]*

Based on the following chart, the statement that lung cancer is more common in people over 40 could be considered as which of the following?

a) Null hypothesis. ✓ correct
b) Alternative hypothesis.
c) Experimental hypothesis.
d) Hypothesis.

Pool 5

Multiple Choice (28)

Q71. *[Multiple Choice]*

A prediction from a theory is known as a

a) Hypothesis ✓ correct
b) Hypotenuse
c) Hypnosis
d) Hypothalamus

Q72. *[Multiple Choice]*

Which of the following is*not*a hypothesis?

a) Compression garments are the best way to prevent the delayed onset of muscle soreness (DOMS). ✓ correct
b) Consumption of caffeine equal to 6 mg/kg of body mass increases reaction time when compared to a placebo.
c) Increased levels of physical activity in school children will lead to prolonged concentration during taught sessions.
d) Listening to music whilst actively cooling down after high-intensity exercise will facilitate the removal of blood lactate and accelerate the recovery process compared with no music.

Q73. *[Multiple Choice]*

A sports psychologist was interested in the effects of a six-week imagery intervention on an athlete's ability to execute a sport-specific skill such as penalty taking in football/soccer. How might you define the imagery variable?

a) Independent variable ✓ correct
b) Dependent variable
c) Outcome variable
d) Resultant variable

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Q74. *[Multiple Choice]*

If maximum oxygen uptake (VO_2max) was considered the independent variable, which of the following would be an appropriate dependent variable?

a) Marathon race time
b) Concentration of muscle lactate
c) Delayed onset of muscle soreness (DOMS)
d) All of the above ✓ correct

Q75. *[Multiple Choice]*

Likert scales are frequently used in psychology to measure intangible phenomena such as motivation. If a five-point Likert scale was used to determine an individual's motivation to perform a specific task, which of following best describes the variable?

a) Discrete variable ✓ correct
b) Continuous variable
c) Ratio variable
d) Nominal variable

Q76. *[Multiple Choice]*

A 400 m race time would be considered an example of which level of measurement?

a) Nominal
b) Ordinal
c) Interval
d) Ratio ✓ correct

Q77. *[Multiple Choice]*

If sport and exercise science students were asked to rank biomechanics, physiology, psychology, nutrition and research methods on a 1–5 scale, with 1 being the subject you like the most and 5 being the one you like the least, which level of measurement would it be?

a) Nominal
b) Ordinal ✓ correct
c) Interval
d) Ratio

Q78. *[Multiple Choice]*

The courses studied by a group of undergraduate students would be considered an example of which level of measurement?

a) Nominal ✓ correct
b) Ordinal
c) Interval
d) Ratio

Q79. *[Multiple Choice]*

Which of the following examples would be considered as a continuous variable?

a) Sex of participants
b) University courses
c) Rank order of preferred modules (e.g. 1 = like the most, 5 = like the least
d) Heart rate ✓ correct

Q80. *[Multiple Choice]*

A group of researchers wanted to know whether a new portable, online gas analysis system provided an accurate measure of VO_2max. To assess whether the VO_2max measures were sufficiently accurate a group of participants performed an incremental exercise test using the new portable system. The test was then repeated one week later, but this time using Douglas bags. How would you define this type of validity?

a) Concurrent validity
b) Content validity
c) Criterion validity
d) Predictive validity ✓ correct

Q81. *[Multiple Choice]*

How would you conceptualize the measurement of blood pressure from a group of individuals on multiple occasions to see if the results were sufficiently similar?

a) Reliability ✓ correct
b) Validity
c) Similarity
d) Predictability

Q82. *[Multiple Choice]*

Which of the following is an example of correlational research?

a) Skinfold thicknesses and body fat in triathletes ✓ correct
b) Percentage body fat in rugby union and rugby league players
c) Alterations in percentage body fat following six weeks of aerobic exercise
d) Body fat measures using air displacement plethysmography (ADP), dual energy X-ray absorptiometry (DEXA) and bioelectrical impedance (BIA)

Q83. *[Multiple Choice]*

Which of the following is an example of experimental research?

a) Stature (height) in men and women ✓ correct
b) Hours of physical activity and duration of concentration in school children
c) Aerobic capacity and marathon race time
d) Attitude and motivation to perform a specific task

Q84. *[Multiple Choice]*

Researchers wanted to examine the impact of a high-protein diet (e.g. Adkins diet) in a group of individuals who had been sedentary for a minimum of 20 years. A variety of physiological phenomena such as blood pressure and blood glucose concentrations were measured before, during and after the diet. How might you describe the research design of such a study?

a) Between-groups design ✓ correct
b) Between-within design
c) Within-subjects design
d) Independent-groups design

Q85. *[Multiple Choice]*

The results of the men's long jump final at the London Olympics in 2012 are given below. What is the mean distance jumped by the top 10 athletes?

Position	Distance (m)
1	8.31
2	8.16
3	8.12
4	8.11
5	8.10
6	8.07
7	8.01
8	7.93
9	7.85
10	7.80

a) 8.04 m

b) 8.05 m ✓ correct

c) 8.06 m

d) 8.07 m

Q86. *[Multiple Choice]*

What is the median distance jumped by the top 10 athletes (see Q15)?

Position
1
2
3
4
5
6
7
8
9
10

Distance (m)
8.31
8.16
8.12
8.11
8.10
8.07
8.01
7.93
7.85
7.80

a) 8.05 m
b) 8.07 m
c) 8.09 m ✓ correct
d) 8.11 m

Q87. *[Multiple Choice]*

Examine the histogram of the qualifying distance for the men's long jump final at the London Olympics in 2012. How would you describe the appearance of the histogram?

a) Negatively skewed ✓ correct
b) Positively skewed
c) Positive kurtosis (leptokurtic)
d) Negative kurtosis (platykurtic)

Q88. *[Multiple Choice]*

Assuming the histogram in Q17 is not normally distributed (i.e. does not have a 'bell-shaped' curve appearance), what would be the most appropriate measure of central tendency?

a) Mean
b) Mode
c) Median ✓ correct
d) Menial

Q89. *[Multiple Choice]*

Why might the range *not* be an accurate representation of data dispersion for the data presented in Q17?

a) Distorted by the lower scores ✓ correct
b) Distorted by the higher scores
c) Distorted by both the lower and higher scores
d) Distorted because the data are platykurtic

Q90. *[Multiple Choice]*

When describing the central tendency and dispersion of a data set, which of the following are acceptable formats? (You may select more than one option.)

a) Mean and standard deviation ✓ correct
b) Median and interquartile range
c) Mode and standard deviation
d) Mean and interquartile range

Q91. *[Multiple Choice]*

If the interquartile range is less sensitive to outlying data points (see the histogram), what might be an appropriate measure of central tendency?

a) Mean
b) Mode
c) Median ✓ correct
d) Menial

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Q92. *[Multiple Choice]*

Based on the data provided, calculate the *z*-score for the participant who finished third in the men's long jump final

Position	Distance (m)
1	8.31
2	8.16
3	8.12
4	8.11
5	8.10
6	8.07
7	8.01
8	7.93
9	7.85
10	7.80

a) 0.5 ✓ correct

b) 0.4

c) 0.6

d) 0.3

Q93. *[Multiple Choice]*

Jessica Ennis won the Olympic heptathlon in London, but how did she perform in the 100 m hurdles, high jump and long jump compared with the other athletes? Using the data below, calculate Jess Ennis' *z*-scores for the three previously mentioned events.

100 m Hurdles (s)
High Jump (m)
Long Jump (m)

JE Result
12.54
1.86
6.48

Mean
13.61
1.80
5.98

SD
0.47
0.08
0.43

100 m Hurdles

a) –2.3 ✓ correct
b) –1.3
c) 2.3
d) 1.3

Q94. *[Multiple Choice]*

Jessica Ennis won the Olympic heptathlon in London, but how did she perform in the 100 m hurdles, high jump and long jump compared with the other athletes? Using the data below, calculate Jess Ennis' *z*-scores for the three previously mentioned events.

100 m Hurdles (s)
High Jump (m)
Long Jump (m)

JE Result
12.54
1.86
6.48

Mean
13.61
1.80
5.98

SD
0.47
0.08
0.43

High Jump

a) 0.75 ✓ correct
b) 1.00
c) 0.50
d) 0.00

Q95. *[Multiple Choice]*

Jessica Ennis won the Olympic heptathlon in London, but how did she perform in the 100 m hurdles, high jump and long jump compared with the other athletes? Using the data below, calculate Jess Ennis' *z*-scores for the three previously mentioned events.

100 m Hurdles (s)
High Jump (m)
Long Jump (m)

JE Result
12.54
1.86
6.48

Mean
13.61
1.80
5.98

SD
0.47
0.08
0.43

Long Jump

a) 1.2 ✓ correct
b) 1.3
c) 1.1
d) 1.0

Q96. *[Multiple Choice]*

How is a null hypothesis denoted?

a) H_0 ✓ correct
b) H_1
c) H_2
d) H_3

Q97. *[Multiple Choice]*

How is a research hypothesis denoted?

a) H_0
b) H_1 ✓ correct
c) H_2
d) H_3

Q98. *[Multiple Choice]*

Which of the following would be classed as a null hypothesis?

a) There will be no significant difference in simple reaction times between men and women. ✓ correct

b) There will be a significant difference in simple reaction times with women being faster than men.

c) There will be a significant difference in simple reaction times with men being faster than women.

d) There will be a significant difference in simple reaction times.