1. A psychologist was interested in whether there was a gender difference in the use of email. She hypothesized that because women are generally better communicators than men, they would spend longer using email than their male counterparts. To test this hypothesis, the researcher sat by the email computers in her research methods laboratory and when someone started using email, she noted whether they were male or female and then timed how long they spent using email (in minutes). What should she report?

Welch Two Sample t-test
data: Time Using Email
t = -1.895, df = 7.177, p-value (two-tailed) = 0.099
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
-60.52295 6.52295

a. Females spent significantly longer using email than males, $t(7.18) = -1.90$, $p < .05$.

c. Females spent significantly longer using email than males, $t(14) = -1.90$, $p < .05$.

e. Females and males did not significantly differ in the time spent using email, $t(7.18) = -1.89$, ns.

f. Females and males did not significantly differ in the time spent using email, $t(7.18) = -1.90$, ns.

2. What does the error bar on an error bar chart represent?
a. The confidence interval round the mean.
b. The standard error of the mean.
c. The standard deviation of the mean.
d. It can represent any of a, b or c.

3. An independent t - test is used to test for:

a. Differences between means of groups containing different people when the data are normally distributed, have equal variances and data are at least interval.

b. Differences between means of groups containing different people when the data are not normally distributed or have unequal variances.

c. Differences between means of groups containing the same people when the

data are normally distributed, have equal variances and data are at least interval.

d. Differences between means of groups containing different people when the data are not normally distributed or have unequal variances.

4. The t‐test can be characterized as a regression (linear) model if:

a. The outcome variable is categorical.

b. The groups have equal sample sizes.

c. The experimental groups are represented by a binary variable (i.e. coded 0 and 1).

d. A t‐test is always different from regression.

5. A researcher measured the same group of people's physiological reactions while watching horror films and compared them to when watching erotic films. The resulting data were normally distributed. What test should be used to analyse the data?

a. Independent t‐test.
b. Dependent (related) t‐test.
c. Mann–Whitney test.
d. Wilcoxon signed‐rank test.

6. R2 is

a. The percentage of variance in the predictor accounted for by the outcome variable.

b. The proportion of variance in the outcome accounted for by the predictor variable or variables.

c. The proportion of variance in the predictor accounted for by the outcome variable.

d. The percentage of variance in the outcome accounted for by the predictor variable or variables.

7. Which of the following statements about the t - statistic in regression is not true?

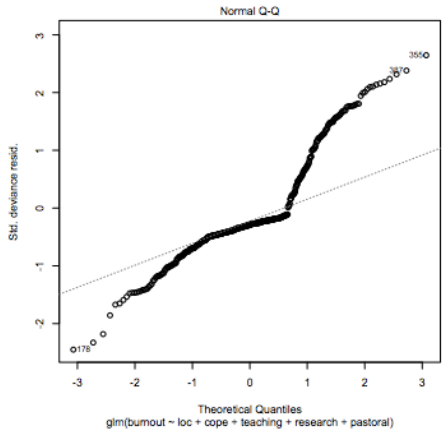
a. The t - statistic tests whether the regression coefficient, b, is equal to 0.

b. The t - statistic provides some idea of how well a predictor predicts the outcome variable.

c. The t - statistic can be used to see whether a predictor variables makes a statistically significant contribution to the regression model.

d. The t - statistic is equal to the regression coefficient divided by its standard deviation.

8. For which regression assumption does the Durbin–Watson statistic test?
a. Linearity.
b. Autocorrelation.
c. Homoscedasticity.
d. Multicollinearity.



9. What does the normal Q-Q plot show?
a. That the data are not normally distributed.
b. Homoscedasticity of errors only.
c. Independence of errors and homoscedasticity.
d. Heteroscedasticity and independence of errors.

10. The covariance is:
a. An unstandardized version of the correlation coefficient.
b. A measure of the strength of relationship between two variables.

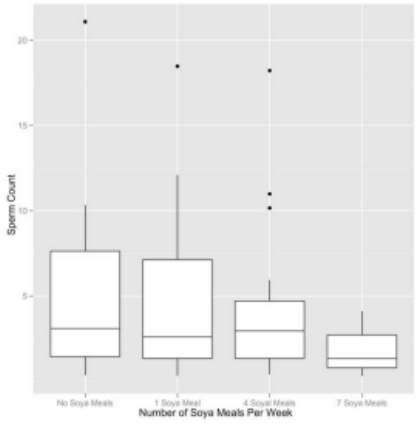
c. Dependent on the units of measurement of the variables.
d. All of the above.

11. Which of the following statement about Pearson's correlation coefficient is not true?
a. It can be used as an effect size measure.
b. It varies between –1 and +1.
c. It cannot be used with binary variables (those taking on a value of 0 or 1).
d. It can be used on ranked data.

12. How much variance has been explained by a correlation of .9?
a. 81%
b. 18%
c. 9%
d. None of the above.

13. Which of the following is least affected by outliers?
a. The range.
b. The mean.
c. The median.
d. The standard deviation.

14. The assumption of homogeneity of variance is met when:
a. The variance in one group is twice as big as that of a different group.
b. Variances in different groups are approximately equal.
c. The variance across groups is proportional to the means of those groups.
d. The variance is the same as the interquartile range.



15. Based on the above chart, what was the interquartile range of sperm count for 'No soya meals' (approximately).

a. 7.5
b. 5.5
c. 9.0
d. 20.0

16. The degree to which a statistical model represents the data collected is known as the:
a. Fit.
b. Homogeneity.
c. Reliability.
d. Validity.

17. What is p the probability of?

a. p is the probability that the results are due to chance, the probability that the null hypothesis (H0) is true.

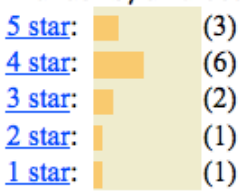
b. p is the probability of observing results as extreme as (or more extreme than) observed, if the null hypothesis (H0) is true.

c. p is the probability that the results are not due to chance, the probability that the null hypothesis (H0) is false.

d. p is the probability that the results would be replicated if the experiment was conducted a second time.

18. A Type I error is when:
a. We conclude that there is an effect in the population when in fact there is not.
b. We conclude that there is not an 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 entered into R is different than the data collected

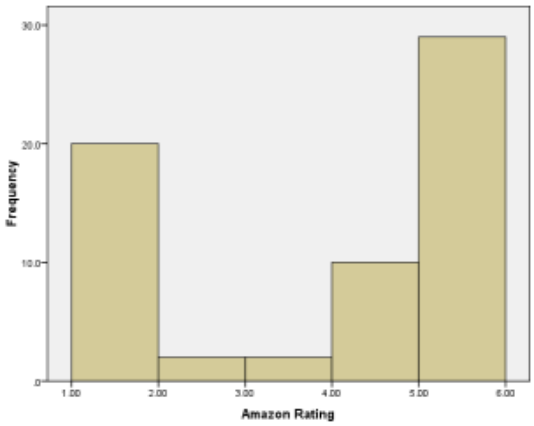
Below is a frequency distribution from www.amazon.co.uk of a CD called *Some Loud Thunder* by an artist called 'Clap Your Hands Say Yeah' (13 customer reviews):



19. Using the data in the frequency distribution, what is the mode of the data?
a. 4.00
b. 3.69

c. 1.00
d. 3.45

20. Using the data in the frequency distribution, what is the range of the data?
a. 5
b. 4
c. 3
d. 1



21. Above 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 normal. 5 star: (3) 4 star: (6) 3 star: (2) 2 star: (1) 1 star: (1)
b. The data are approximately bimodal.
c. The median rating was 2.
d. The data are leptokurtic.

22. 'Children can learn a second language faster before the age of 7'. Is this statement:
a. A null hypothesis.
b. A non - scientific statement.
c. A two - tailed hypothesis.
d. A one - tailed hypothesis.

23. If a psychological test is valid, what does this mean?
a. The test will give consistent results.
b. The test measures what it claims to measure.
c. The test has internal consistency.
d. The test measures a psychologically useful variable.

24. If my null hypothesis is 'Dutch people do not differ from English people in height', what is my alternative hypothesis?
a. Dutch people are taller than English people.
b. English people are taller than Dutch people.
c. Dutch people differ in height from English people.
d. All of the above are plausible alternative hypotheses.

25. A predictor variable is another name for:
a. A dependent variable.
b. A confounding variable.
c. A discrete variable.
d. An independent variable.

26. 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. Positively skewed.
b. Leptokurtic.
c. Platykurtic.
d. Negatively skewed.

27. Which of the following is designed to compensate for practice effects?
a. A repeated measures design.
b. Randomization of participants.
c. Counterbalancing.
d. A control condition.

28. Variation due to variables that have not been measured is known as:
a. Unsystematic variance.
b. Homogeneous variance.
c. Systematic variance.
d. Model variance.