quiz 1

1. The median of a dataset is
(a) the average value
(b) a number that divides the dataset into two equally sized groups
(c) the most frequently occurring value in the dataset
(d) the range of the dataset

2. The mode of a dataset is
(a) the average value
(b) a number that divides the dataset into two equally sized groups
(c) the most frequently occurring value in the dataset
(d) the range of the dataset

3. The standard deviation of a dataset is
(a) the average value
(b) the most frequently occurring deviation in the dataset
(c) the sum of squares of the dataset
(d) a measure of the deviation of the dataset around the mean

4. What does the symbol Σ mean?
(a) sum
(b) product
(c) difference
(d) ratio

answers: b, c, d, a

quiz 2

1. The normal distribution is
(a) symmetric
(b) positively skewed
(c) negatively skewed

2. The *z* score is the same thing as the
(a) mean
(b) median
(c) mode
(d) standard score

3. A percentile score is the percentage of a distribution that
(a) falls above a given score
(b) falls below a given score
(c) equals a given score
(d) is greater than the mean

4. What is the formula for a z score?
(a) $z = (X - \mu)/\sigma$
(b) $z = \frac{1}{N}\Sigma X$
(c) $z = \Sigma X^2$
(d) $z = (X - \sigma)/\mu$

answers: a, d, b, a

quiz 3

1. The opposite of the null hypothesis is
(a) the predicted hypothesis
(b) the expected hypothesis
(c) the alpha hypothesis
(d) the alternative hypothesis

2. The central limit theorem ensures that
(a) all populations are normally distributed
(b) all large populations are normally distributed
(c) the mean of a small sample is normally distributed
(d) the mean of a large sample is normally distributed

3. The standard error of the mean is a measure of
(a) the variability of the population
(b) the variability of the sample mean over many different samples
(c) the mean of the population
(d) the mean of samples from the population

4. To calculate the t value we do not need to know
(a) the sample mean
(b) the standard error of the mean
(c) the population standard deviation

answers: d, d, b, c

quiz 4

1. Statistical significance testing (i.e., testing whether $p<0.05$) is
(a) a flawless way of evaluating the results of experiments
(b) a completely outdated way of evaluating the results of experiments
(c) one useful tool among others for evaluating the results of experiments

2. One important problem with statistical significance testing is that
(a) it is strongly affected by sample size
(b) it does not take into account random variations from sample to sample
(c) t values are difficult to calculate
(d) it assumes that we know the population standard deviation

3. Another important problem with significance testing is that
(a) it is unaffected by sample size
(b) critical t values are usually impossible to determine
(c) sample standard deviations are difficult to calculate
(d) statistically significant differences are not always practically important differences

answers: c, a, d

quiz 5

1. Which of the following is not a common kind of t test?
(a) variable samples t test
(b) independent samples t test
(c) dependent samples t test
(d) one-sample t test

2. We usually use the t distribution when we do not know
(a) the sample size
(b) the population mean
(c) the population standard deviation
(d) the alpha (α) level

3. What kind of t test do we usually use to compare measurements on the same sample at different points in time?
(a) repeated samples t test
(b) independent samples t test
(c) dependent samples t test
(d) one-sample t test

answers: a, c, c [for question 3, we also accepted a]

quiz 6

1. How do we test whether a Pearson correlation coefficient is significantly different from zero?
(a) a sigma test
(b) a z test
(c) a rho test
(d) a t test

2. Which of the following <u>can</u> a Pearson correlation coefficient tell us about two variables?
(a) the direction of their correlation
(b) the strength of their correlation
(c) both of the above

3. Which of the following can a correlation coefficient <u>not</u> tell us about two variables?
(a) whether they are causally related
(b) whether they are positively correlated
(c) whether they are negatively correlated
(d) whether they are uncorrelated

4. Which of the following is the coefficient of determination?
(a) r^0
(b) r^1
(c) r^2
(d) r^3

answers: d, c, a, c

quiz 7

1. The chi-square test is a _____ statistical test.
(a) parametric
(b) nonparametric

2. A chi-square test involves calculating degrees of freedom. This statement is:
(a) true
(b) false

3. Which property does the chi-square test covered in today's readings test for?
(a) mean equal to zero
(b) normal distribution of data
(c) independence

4. In a chi-square test we compare a chi-square value to a critical chi-square value. This statement is:
(a) true
(b) false

answers: b, a, c, a