Statistics Worksheet

Q1-a. True

Q2-a. The population size

Q3-b. False

Q4-a. We are 5% confident the results have not occurred by chance

Q5-c. If the region of rejection is located in one or two tails of the distribution

Q6-a. We reject the null hypothesis whilst the alternative hypothesis is true

Q7-a. It is a sample proportion.

Q8-a. .013

Q9-c. 1.667

Q10-c. –2.50

Q11-c. There is a difference between the proportions of American men and American women who belong to sports clubs.

Q12-b. It is reasonable to say that more than 40% of Americans exercise regularly.

Q13-The test statistic for a two-sample independent t-test is calculated by taking the difference in the two sample means and dividing by either the pooled or unpooled estimated standard error. The estimated standard error is an aggregate measure of the amount of variation in both groups.

Q14-The standard deviation of the difference between sample means (σd) is approximately equal to: σd = sqrt(σ12 / n1 + σ22 / n2).

Q15-For the 2-sample t-test, the numerator is again the signal, which is the difference between the means of the two samples. For example, if the mean of group 1 is 10, and the mean of group 2 is 4, the difference is 6. The default null hypothesis for a 2-sample t-test is that the two groups are equal.