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Stats 1 Section 402

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1. The null hypothesis is that there is no difference in the means of the intrinsic and extrinsic groups. The alternative is that the mean of the extrinsic group is lower. The T value is -2.93 and the pvalue is .0027. This means we reject the null hypothesis. We can then conclude that there is very likely a difference in creativity when motivated by intrinsic or extrinsic values, specifically someone motivated extrinsically scores lower than someone who is motivated intrinsically. The p-value was divided by two since SAS runs it as a two sided test.
2. The 99% confidence interval is -4.14 +/- -2.95\*sqrt(5.25^2/23 + 4.44^2/24) which results in the range of -8.33 to 0.052 which is similar to the CI calculated on SAS however there’s an important difference as zero is included in the one I calculated. This means we can be less confident that the difference between the two groups is really there.
3. The populations the samples are being drawn from must be normal and the standard deviations of each population should also be equal. The histogram shows that the populations are broadly normal and we don’t have any evidence to say that it doesn’t come from a normal population. For the standard deviation the F test run by SAS produces a p-value of 0.428 which is larger than 0.01 (alpha) meaning we accept the null hypothesis that the standard deviations are equal.

