1. One class, of 20 students, averages 75 on a test with variance, \( s_1^2 = 18 \).
   Another class, of 21 students, averages 78 on the same test, with \( s_2^2 = 13 \).

   (a) Compute the estimated standard error of the difference of sample means.
   (You have to identify exactly what this number is, here.)

   (b) Are the averages significantly different at the 5% level? Include calculation of the test statistic and p-value. Use TI test for df. Report the df the TI gives. Also find the critical value. State \( H_0 \) and \( H_1 \)

2. With the same classes as in problem 4., decide if the sample variance of the first class is significantly higher than that of the second class, at the 5% level. Include the calculation of the test statistic and p-value. Also find the critical value. State \( H_0 \) and \( H_1 \). Assume normal distributions.

   (2 points, total.)