INSTRUCTIONS

In a single file, write code to conduct the following tasks and comment the code clearly using #

TASKS

Part A)

Simulate a vector of size 100 drawn from a Normal(6,4) distribution, and another vector of size 80 drawn from a Normal(7,2) distribution.

Look at the code from Lab 4 and modify it to perform the following tasks. (Not the function on the last page, the code for one sample tests)

1. (4 marks) Write your own code to calculate the p-value for: H0: the means of the populations are equal. HA: the means of the populations are not equal. Use a t-test. Assume that the populations have equal variance.
2. (1 mark) Repeat the previous task using the t.test function in the package {stats}.
3. (1 mark) Using a significance level of 0.01, give your conclusions for the result of this test

Part B)

1. (1 mark) Load the csv file survey.csv in R. (See Lab 1 for a reminder of how to do this). Create a contingency table for the variables Smoke and Exer and run a chi square test.
2. (4 marks) In comments in your code, answer the following questions:
   1. Why did the code give an error message?
   2. What is the null hypothesis for this test and the alternative hypothesis for this test?
   3. Using a significance level of 0.05, give your conclusions for the result of this test.