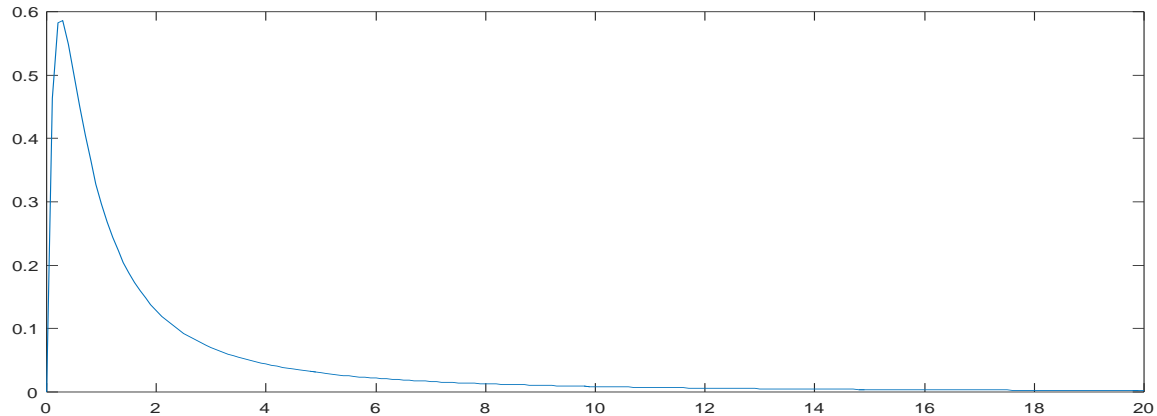**[Write down the MATLAB commands you used.]**

1. (50%) The following is an F-distribution for DF1=4, DF2=2. Compute the followings:

(a) Determine the probability density for F=2.   (b) The area under curve between F=2 to F=5. (c) The area under curve from F=20 to ∞. (d) The F value giving a right-tail area of 0.05. (e) The F value giving a right-tail area of 0.10.

>> fpdf(2,4,2) =   0.1280
>> fcdf(5,4,2) - fcdf(2,4,2) = 0.1864
>> fcdf(inf, 4,2) - fcdf(20,4,2) = 0.0482
>> finv(0.95,4,2) = 19.2468
>> finv(0.9,4,2) =   9.2434

2. (50%) In the class we computed the p-value for testing Group 1 vs Group 2, as well as testing Group 1 vs Group 3. Perform the same test for Group 2 vs Group 3, and answer the following questions:

(a) What is the null hypothesis for this test?

(b) What is the level of significance used for this particular test?

(c) What is the t-value you've computed?

(d) What is the p-value you've computed?

(e) Your conclusion? Reject or not reject? Does this mean the two groups are comparable or not?

H_o: $\mu_2 = \mu_3$

$\alpha = 0.1/3 = 0.033$

>> n2=16;x2=3.03;n3=23;x3=2.88; >> t23=(x2-x3)/sqrt(0.254*(1/n2+1/n3)) = 0.9143

>> (1-tcdf(t23,57))*2 = 0.3644

P-value is greater than 0.033, we therefore do not reject the null hypothesis. That is, the two means are comparable.