Math 113: Classroom Activity 9 Name : _____
10 pts

Materials Needed:

Paper towels, food coloring, ruler.

Instructions:

Place a paper towel or piece of paper across the desk to avoid staining. Hold the paper towel off the desk. Choose at least five different locations on the paper towel and place one drop of food coloring in each location. Wait at least 15 seconds for the drop to expand and measure the diameter (in mm) of the stain. The stains will be mostly circular, but you may need to measure each stain in two directions and average the measurements. Repeat the process for each brand of paper towel.

1. For each brand of paper towel, record the brand name and the diameters (in mm) of each of the five drops of food coloring in the table below.

Brand	1	2	3	4
Diameter 1				
Diameter 2				
Diameter 3				
Diameter 4				
Diameter 5				
Diameter 6				

Test the claim that the mean diameter of circle for each brand of paper towel is the same.

2. Write the null and alternative hypotheses.

H_0:

H_1:

3. Use Minitab to complete the One-Way Analysis of Variance Table

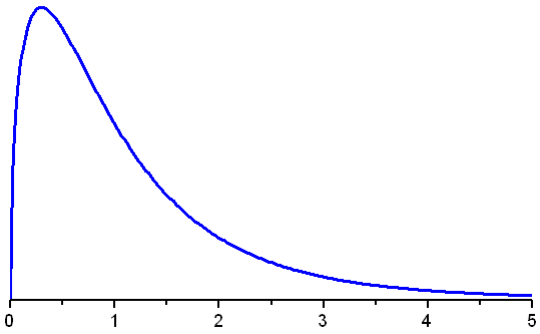
Source	SS (variation)	÷ df	= MS (variance)	F	P
Factor (between)					
Error (within)					
Total					

4. What is the value of the test statistic?

5. What is the p-value?

6. Use Minitab to find the critical F value.

7. Label the figure below.



8. The test statistic (does / does not) fall in the critical region.

9. The p-value is (less / greater) than the significance level.

10. The decision is to (reject / retain) the null hypothesis.

11. There (is / is not) enough evidence to (reject / support) the claim that there is a difference in paper towel absorption.

12. There (is / is not) enough evidence to (reject / support) the claim that there is no difference in paper towel absorption.