

MAT 305 STATISTICS PROJECT FALL 2015

1. Compute the following information for the displacement measurements, *provide the units for the measurements. Use three decimal places in calculations. Provide answers to two decimal places.*

	BT (before-test)	EOT	Difference (= BT - EOT)
Sample mean			
Sample variance			
Sample standard deviation			
Sample size, n			

**SHOW FORMULA AND ALL THE VALUES USED IN THE CALCULATIONS
FOR THE QUESTIONS BELOW!**

2. In the questions below you will be asked to compute confidence intervals on the populations means, what assumptions must you make about the distributions from which the samples were taken?

3. Compute the two-sided 80% confidence interval on μ_1 , the mean for the BT displacement measurements.

Is the two-sided 90% confidence interval smaller or larger than the 80% two-sided confidence interval?

Smaller _____ Larger _____

Explain your answer. _____

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4. Compute the two-sided 80% confidence interval on μ_2 the mean for the EOT displacement measurements.

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5. Compute the two-sided 80% confidence interval on σ_1 the standard deviation of the EOT measurements.

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6. Compute the two-sided 80% confidence on $\mu_1 - \mu_2$ the difference of the means of BT and EOT. What assumption(s) are you making? _____

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7. Compute the two-sided 80% confidence interval on the difference (BT – EOT) of the measurements in your sample.

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8. How is the difference of the means of BT and EOT related to the difference (BT – EOT) of the measurements? _____

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Are all of the differences positive or negative? _____ Explain. _____

9. Describe and compare the two-sided confidence intervals computed in questions 6 and 7. Are they equal? _____ Should they be equal? _____

Explain. _____

10. Is it more appropriate to compute the confidence interval in question 6 or question 7? Explain
