

Name: \_\_\_\_\_

1. An experiment has  $n_1 = 6$  plants in the treatment group and  $n_2 = 8$  plants in the control group. After some time, the plants' heights (in cm) are measured, resulting in the following data:

	value1	value2	value3	value4	value5	value6	value7	value8
sample 1:	0.85	1.01	1.02	1.29	1.2	0.87		
sample 2:	1.22	1.26	1.01	1.55	1.65	1.02	1.24	1.37

- (a) Determine degrees of freedom.
- (b) Determine  $t^*$  for a 98% confidence interval.
- (c) Determine  $SE$ .
- (d) Determine a lower bound of the 98% confidence interval of  $\mu_2 - \mu_1$ .
- (e) Determine an upper bound of the 98% confidence interval of  $\mu_2 - \mu_1$ .
- (f) Determine  $|t_{\text{obs}}|$  under the null hypothesis  $\mu_2 - \mu_1 = 0$ .
- (g) Determine a lower bound of the two-tail  $p$ -value.
- (h) Determine an upper bound of two-tail  $p$ -value.
- (i) Do you reject the null hypothesis with a two-tail test using a significance level  $\alpha = 0.02$ ? (yes or no)

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(b) 

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(c) 

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(d) 

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(g) 

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(h) 

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(i) 

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