**ID: 023** 

1. An experiment has  $n_1 = 3$  plants in the treatment group and  $n_2 = 6$  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
sample 1:	1.07	0.98	1			
sample 2:	1.86	2.77	2.8	1.91	2.37	2.21

- (a) Determine degrees of freedom.
- (b) Determine  $t^*$  for a 99% confidence interval.
- (c) Determine SE.
- (d) Determine a lower bound of the 99% confidence interval of  $\mu_2 \mu_1$ .
- (e) Determine an upper bound of the 99% confidence interval of  $\mu_2 \mu_1$ .
- (f) Determine  $|t_{obs}|$  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  $\alpha$  = 0.01? (yes or no)

1.	(a)									
	(b)				] .					
	(c)				] .					
	(d)									
	(e)				] .					
	(f)				] .					
	(g)									
	(h)				] .					
	(i)									