Homework 1

2.1. The output for a random sample of data is shown below. Some of the quantities are missing. Compute the values of the missing quantities.

Variable	N	Mean	SE Mean	Std. Dev.	Variance	Minimum	Maximum
Y	9	19.96	?	15.94	?	15.94	27.16

2.2. The output for a random sample of data is shown below. Some of the quantities are missing. Compute the values of the missing quantities.

Variable	N	Mean	SE Mean	Std. Dev.	Sum
Y	16	?	0.159	?	399.851

2.3. Suppose that we are testing H_0: $\mu = \mu_0$ versus H_1: $\mu \neq \mu_0$. Calcualte the *P*-value for the following observed values of the test statistic from normal distribution:

(a) $Z_0 = 2.25$
(b) $Z_0 = 1.55$
(c) $Z_0 = 2.10$
(d) $Z_0 = 1.95$
(e) $Z_0 = -0.10$

2.6. Suppose that we are testing H_0: $\mu = \mu_0$ versus H_1: $\mu > \mu_0$ with a sample size of $n = 15$. Calculate bounds on the *P*-value for the following observed values of the tst statistic:

(a) $t_0 = 2.35$
(b) $t_0 = 3.55$
(c) $t_0 = 2.00$
(d) $t_0 = 1.55$

2.8. Consider the output shown below.

One-Sample T: Y

Test of mu = 91 vs. not = 91

Variable	N	Mean	Std. Dev.	SE Mean	95% CI	T	P
Y	25	92.5805	?	0.4675	(91.6160, ?)	3.38	0.002

(a) Fill in the missingvalues in the output. Can the null hypothesis be rejected at the 0.05 level? Why?
(b) Is this a one-sided or two-sided test?
(c) If the hypothesis had been H_0: $\mu = 90$ versus H_1: $\mu \neq 90$ wold you reject the null hypothesis at the 0.05 level?
(d) Use the output and the *t* table to find a 99 percent two-sided CI on the mean.
(e) What is the *P*-value if the alternatie hypothesis is H_1: $\mu > 91$?