Each person in a random sample of 228 male teenagers and a random sample of 306 female teenagers was asked how many hours he or she spent online in a typical week (NY Times 1-25-2006). Based on the summary statistics below, can we conclude there is a significant difference in the mean number of hours spent online per week for the two genders?

Females:	mean = 14.1 hours	standard deviation = 11.8 hours
Males:	mean = 15.1 hours	standard deviation = 11.4 hours

$H_0: \mu_M = \mu_F$

$\mu_M - \mu_F = 0$

$H_A: \mu_M > \mu_F$

$\mu_M - \mu_F > 0$

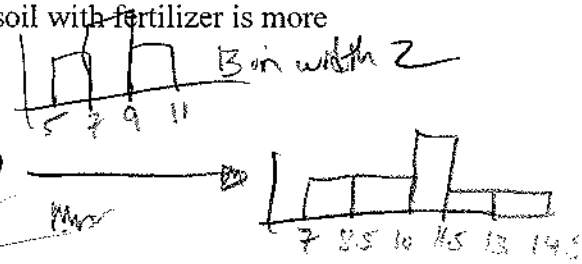
$\alpha = .05$

P-value = .162

Since the p-value > α-level this data Does not provide Significant differences in the number of hours males and Females spend on line in a typical week.

To test if a new fertilizer is effective, 20 similar tomato plants were randomly assigned to be planted in either regular soil or soil with fertilizer. After 3 months, the total weight of the tomatoes from each plant was measured. These figures (in pounds) are below. Construct and interpret a 95% confidence interval for the difference in mean production for the two conditions. Does the interval give evidence that soil with fertilizer is more effective than regular soil for growing tomato plants?

regular soil:	7, 9, 5, 8, 7, 6, 7, 10, 8, 6
soil w/ fertilizer:	9, 9, 11, 7, 12, 8, 10, 10, 13, 10



95% CI: $\mu_{Fer} - \mu_{RS} = [1.05, 4.15]$

a] I am 95% confident that the true avg weight of Tomatoes grown w/ Fertilizer could be larger than the ones grown in the regular soil by somewhere between 1.05 pounds and 4.15 pounds.

b] Yes at the Significance level of .025.

* I'm hoping your solution is better presented than this .... sorry ....

A recent study (*Pediatrics* [2008]: 112-118) investigated the effect of fast food consumption on other dietary variables. For a sample of 663 teens who reported that they did not eat fast food during a typical day, the mean caloric intake was 2258 with a SD of 1519. For a sample of 413 teens who reported that they did eat fast food on a typical day, the mean caloric intake was 2637 with a SD of 1138. Construct and interpret a 99% CI for the true difference in mean caloric intake for these two types of teens.

No Fast Food $\Rightarrow$ $n = 663$ $\overline{NF} = 2258$ $s_{NF} = 1519$

Fast Food $\Rightarrow$ $n = 413$ $\overline{F} = 2637$ $s_F = 1138$

$(-588.9, -169.1)$

This was constructed by doing Non-Fast Food eaters Calories — Fast Food eaters Calories ... Since it is negative, the Fast Food group average was larger ...

I am 99% confident that the average number of calories consumed daily by people who eat Fast Food exceeds the avg. number of calories consumed by non-Fast Food eaters by somewhere between 169 and 589 calories.