Bulimia study. The "fear of negative evaluation" (FNE) scores for 11 female students known to suffer from the eating disorder bulimia and 14 female students with normal eating habits are reproduced in the next table. (Recall that the higher the score, the greater is the fear of a negative evaluation.)

Bulimic students:	21	13	10	20	25	19	16	21	24	13	14			
Normal students:	13	6	16	13	8	19	23	18	11	19	7	10	15	20

a. Locate a 95% confidence interval for the difference between the population means of the FNE scores for bulimic and normal female students on the MINITAB printout below. Interpret the result.

MINITAB Output for Exercise 9.19

Two-Sample T-Test and CI: FNESCORE, GROUP

Two-sample T for FNESCORE

GROUP	N	Mean	StDev	SE Mean
Bulimic	11	17.82	4.92	1.5
Normal	14	14.14	5.29	1.4

Difference = mu (Bulimic) – mu (Normal)
Estimate for difference: 3.68
95% CI for difference: (-0.60, 7.95)
T-Test of difference = 0 (vs not =): T-Value = 1.78 P-Value = 0.089 DF = 23
Both use Pooled StDev = 5.1303

With a 95% confidence, the difference between the mean FNE scores in the bulimic and in the normal group lies between -0.60 and 7.95. Since the interval contains 0, we cannot conclude that μ_1 and μ_2 are significantly different.

b. What assumptions are required for the interval of part a to be statistically valid? Are these assumptions reasonably satisfied? Explain.

We have to assume that

X = FNE score of a bulimic female student ~ $N(\mu_1, \sigma)$
Y = " " " " normal " " ~ $N(\mu_2, \sigma)$

The histogram of the X sample does not seem to come from a Gaussian distribution (it does not have a bell shape at all). The histogram of the Y sample could come from a normal. In both cases the sample size is so low that it is difficult that the histogram should resemble the underlying probability density of X and Y.