

Individual T-Test Quiz

20 points possible

1. Jordan's cat "Fern" is a finicky eater. Jordan is trying to determine which of two brands of canned cat food Fern prefers, Tab-a-Cat or Chow Lion. For two months, she flips a coin each day to decide which of the two foods to feed Fern, and weighs how much Fern eats in grams. Here is the data:

Data	number of days	mean weight of food (grams)	standard deviation
Tab-a-Cat	31	85.2	3.45
Chow Lion	30	82.1	4.62

(a) Find the standard error for the difference in the mean amount of Tab-a-Cat that Fern eats and the mean amount of Chow Lion she eats. (3 points)

(b) Construct and interpret a 99% confidence interval for the difference in mean amount of food Fern eats when she is offered Tab-a-Cat and when she is offered Chow Lion. (7 points)

(c) Suppose we want to test the hypothesis that the mean amount of Tab-a-Cat Fern eats is higher than the mean amount of Chow Lion she eats. State the null and alternative hypotheses for this test. (4 points)

(d) The test statistic is $t = 2.962$. Determine the P-value and draw an appropriate conclusion, using $\alpha = 0.01$. (6 points)