

# HYPOTHESIS TESTING: MEAN

TEXT: 9.1, 9.2, 9.3, 9.4, 9.5

LAST NAME	FIRST NAME	DATE
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1 (4 points). A two-tailed test for the population mean with the sample of size of 11 yields the test statistic of  $-3.14$ .

- (a) State the distribution of the test statistic:
- (b) Sketch the pdf of the test statistic and shade the  $p$ -value.

- (c) Compute the  $p$ -value of the test.
- (d) Can  $H_0$  be rejected with  $\alpha = 0.05$ ?

2 (4 points). A two-tailed test for the population mean with the sample of size of 17 yields the test statistic of  $1.99$ .

- (a) State the distribution of the test statistic:
- (b) Sketch the pdf of the test statistic and shade the  $p$ -value.

- (c) Compute the  $p$ -value of the test.
- (d) Can  $H_0$  be rejected with  $\alpha = 0.05$ ?

3 (6 points). Over the course of a few weekends a hospital records the ER wait time for 40 randomly selected patients. The average wait time for this sample is 11 minutes with a standard deviation of 3 minutes. Is there enough evidence to support the hypothesis that the average ER wait time exceeds 10 minutes? Conduct the test at a 10% level of significance.

(a)  $H_0$  :

$H_1$  :

(b) State the distribution of the test statistic:

(c) Sketch a graph of the distribution of the test statistic, find and label the critical value(s), shade the rejection region.

(d) Compute the test statistic and sketch it on the graph above.

(e) Find the  $p$ -value of the test.

(f) State the conclusion.