

Assignment #7 — Due Friday, November 4 by 4:00 P.M.

Turn in homework to your TA's mailbox using this sheet as the cover page.

Fill in your name and also circle the *lecture section in which you are registered* and circle the *discussion section you expect to attend* to pick up this assignment.

Name:

Lecture 1 (Hanlon). **311:** Tu 1:00 - 2:15pm **312:** Th 8:00 - 9:15am **313:** We 1:00 - 2:15pm

Lecture 2 (Larget). **321:** Tu 1:00 - 2:15pm **322:** We 2:30 - 3:45pm **323:** We 1:00 - 2:15pm

Please answer the following questions.

- The following questions ask you to compute confidence intervals for a population mean μ . We assume that the data is approximately normal. We use n , \bar{y} , and s to denote the sample size, the sample mean and sample standard deviation, respectively.
 - $n = 10$, $\bar{y} = 20.2$, $s = 5.2$. Compute a 90% confidence interval for μ .
 - $n = 130$, $\bar{y} = 100.11$, $s = 20$. Compute a 95% confidence interval for μ .
 - $n = 17$, $\bar{y} = -5.6$, $s = .2$. Compute a 99% confidence interval for μ .
- The following questions ask you to compute the test statistic and p-value for a one-sample t-test. We assume that the data is approximately normal. We use n , \bar{y} , and s to denote the sample size, the sample mean and sample standard deviation, respectively.
 - $n = 10$, $\bar{y} = 20.2$, $s = 5.2$. Compute the test statistic and p-value for the test of $H_0 : \mu = 22$ vs. $H_A : \mu \neq 22$.
 - $n = 130$, $\bar{y} = 100.11$, $s = 20$. Compute the test statistic and p-value for the test of $H_0 : \mu = 99$ vs. $H_A : \mu > 99$.
 - $n = 17$, $\bar{y} = -5.6$, $s = .2$. Compute the test statistic and p-value for the test of $H_0 : \mu = -4.5$ vs. $H_A : \mu < -4.5$.
- Textbook p.277, Problem 11
- Textbook p.277, Problem 13
- Textbook p.278, Problem 14
- Consider again Problem 13 (p. 277). *Describe* how you would use a computer to produce a 90% bootstrap confidence interval for the median time going clockwise in the Southern Hemisphere dolphins.
Please note. 1) You do not have to produce the confidence interval but instead describe the procedure you would use to produce the interval. 2) See the course slides Inference for a Single Population Mean and also the textbook p.555-556 for a description of the bootstrap procedure.