

**The University of Portland
Donald P. Shiley School of Engineering**

**EGR361
Analysis of Engineering Data**

HOMEWORK 6—Inferential Statistics & Hypothesis Testing

Assigned: Monday, March 19, 2018
Due: Wednesday, March 28, 2018
Text: 4-1 – 4-4
Midterm Exam # 2: Monday, April 9, 2018 (closed-book, 2 crib-sheets, calculator)

Problems:

- 1) A city's building code requires that the average breaking strength of residential sewer pipe be at least 2500 lbs per foot of length. To sell sewer pipes in this city, a pipe manufacturer must demonstrate that its product meets this specification. So, a random sample of a dozen sewer pipes manufactured by a company called Epip are tested and the average breaking strength is found out to be 2435 lbs/ft with a standard deviation of 120 lbs/ft.
 - a) Is there evidence to support the claim that the average breaking strength of residential sewer pipe manufactured by Epip is less than 2500 lbs/ft? Use $\alpha = 0.05$.
 - b) Repeat part a) for $\alpha = 0.01$.
- 2) Text 4-37 (a, b)
- 3) Text 4-40 (a, d)
- 4) Text 4-41 (a); NOTE: Please change "...is at least 2.00 cm." to "...is greater than 2.00 cm."
- 5) Text 4-42 (a, b)
- 6) Text 4-43
- 7) Text 4-44
- 8) Text 4-46