

MATH 21-01 (Introductory Statistics), HW 11 (100 points). Due: 11/18/2016 in class.

From textbook (50 pts)

Section 7.2: 13, 14, 18

Section 7.3: 2, 9, 10, 11

Section 7.4: 5, 6, 13

Not from textbook (50 pts)

Please show your work and state the reasoning behind your computations for each of the following problems.

- (A - 15 pts) In a random sample, 136 of 400 people given a flu vaccine experienced side effects. Construct a 95% confidence interval for the true proportion of people who will experience side effects to the vaccine.
- (B - 20 pts) A paint manufacturer wants to determine the drying time of a new wall paint. If for 12 test areas of the same size, the manufacturer obtained a mean drying time of 66.3 minutes and a standard deviation of 8.4 minutes, construct a 95% confidence interval for the true mean μ . Suppose the drying time is normally distributed.
- (C - 15 pts) In 16 test runs over several hours each, the gas consumption of an engine had a standard deviation of 2.2 gallons. Construct a 99% confidence interval for σ (a measure for the true variability of the gas consumption of the engine). Suppose the gas consumption of the engine over several hours of operation is normally distributed.