Homework 8

Due March 23, 2017 at 5pm in Snedecor 2404

Please show all work for full credit. Print and staple your assignment together and submit by 5pm of the due date in Snedecor 2404. If you cannot attend class or office hours on the due date, please arrange to submit your homework prior to the due date.

1. [Ch. 5.2, Exercise 2, pg. 263] Suppose that Z is a standard normal random variable. Evaluate the following probabilities involving Z:
   a) $P[Z < -.62]$
   b) $P[Z > 1.06]$
   c) $P[-.37 < Z < .51]$
   d) $P[|Z| \leq .47]$
   e) $P[|Z| > .93]$
   f) $P[-3.0 < Z < 3.0]$

   Now find numbers # such that the following statements involving Z are true:
   g) $P[Z \leq \#] = .90$
   h) $P[|Z| \leq \#] = .90$
   i) $P[|Z| > \#] = .03$
2. [Ch. 5.2, Exercise 3, pg. 263] Suppose that X is a normal random variable with mean 43 and standard deviation 3.6. Evaluate the following probabilities involving X:
   a) $P[X < 45.2]$
   b) $P[X \leq 41.7]$
   c) $P[43.8 < X \leq 47.0]$
   d) $P[|X - 43| \leq 2]$
   e) $P[|X - 43| > 1.7]$

   Now find numbers # such that the following statements involving X are true:
   f) $P[X < \#] = .95$
   g) $P[X \geq \#] = .30$
   h) $P[|X - 43| > \#] = .05$