Ceng 272 - Quiz 4

Solve all questions.

For Monday section

1. The average life of a certain type of small motor is 10 years with a standard deviation of 2 years. The manufacturer replaces free all motors that fail while under guarantee. If he is willing to replace only 3% of the motors that fail, how long a guarantee should he offer? Assume that the lifetime of a motor follows a normal distribution.

- 2. Evaluate $P(1 \le X \le 4)$ for a binomial variable with n = 15 and p = 0.2 by using
 - (a) Table A.1 in the Appendix;
 - (b) The normal-curve approximation.

For Thursday section

- 1. A process yields 10% defective items. If 100 items are randomly selected from the process, what is the probability that the number of defectives
 - (a) exceeds 13?
 - (b) is less than 8?

- 2. Evaluate $P(1 \le X \le 4)$ for a binomial variable with n = 15 and p = 0.2 by using
 - (a) Table A.1 in the Appendix;
 - (b) The normal-curve approximation.