MIDTERM EXAM will be held on Monday, July 27. Midterm is out of 120 points. Midterm duration is 110 min.
The program of Midterm includes the following material:

1. Quartiles and Median (p.65) of Data. 5-number Summary.
2. Mean and Standard Deviation of Data. Their properties (How do they change under a linear transformation of data?). Exercises 2.58, 2.63, p.77. Chebyshev’s Rule.
   pp.79-86, Exercise 2.72.
3. Stem-and-leaf display and Histogram. (pp.51-58.)
5. Independence of Events. (p.160, Exercise 3.121)
8. Poisson Distribution (pp.212-214, Exercises 4.61, 4.62, 4.71).

Take-Home problem of Midterm Exam (15 points).
Please work out the following task prior to Midterm, bring it in and attach to your exam.

a. (4 pts.) Devise a problem of your own where a random variable X subject to B(6,0.85) arises.

b. (5 pts. =2.5+2.5) Define the distribution of X. Give both the individual and cumulative probabilities.
c. (3pts. = 1+2) Determine $\mu$ and $\sigma$ for the problem.

d. (2 pts.) Give the histogram representation of the distribution.

e. (1 pts.) What is the probability that $X > 4$?

Instructor suggests a problem like this: *The probability that a patient contracted with a disease fully recovers, is 0.85. 6 patients contracted with the disease are chosen at random. My random variable $X$ is: The number of patients (out of 6) who fully recover.*

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