

Homework #4 – Due Oct. 1
STAT-UB.0103 – Statistics for Business Control and Regression Models

Problem 1

Sincich, Ex. 4.18. Do not use the empirical rule to solve part (c).
(Note: if you have the 2nd edition of the textbook, then the problem number is 4.16)

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Problem 2

Sincich, Ex. 4.36: Expected lotto winnings.
(2nd edition: Ex. 4.32)

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Problem 3

Sincich, Ex. 4.47: Working on summer vacation. Recall that an *Adweek/Harris* (July 2011) poll found that 35% of U.S. adults do not work at all while on summer vacation. In a random sample of 10 U.S. adults, let X represent the number who do not work during summer vacation.

- (a) For this experiment, define the event that represents a “success.”
- (b) Explain why X is (approximately) a binomial random variable.
- (c) Give the value of p for this binomial experiment.
- (d) Find $P(X = 3)$.
- (e) Find the probability that 2 or fewer of the 10 U.S. adults do not work during summer vacation.

(This problem is from the 3rd edition of the textbook; it is missing from the 2nd edition.)

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Problem 4

Sincich, Ex. 4.81: Making high-stakes insurance decisions.
(2nd edition: Ex. 4.75)

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Problem 5

A multiple-choice quiz has 15 questions. Each question has five possible answers, of which only one is correct.

- (a) What is the probability that sheer guesswork will yield at least 12 correct answers?
- (b) What is the expected number of correct answers by sheer guesswork?

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