Evan Louie
WeBWorK assignment `Assignment-04` is due on 11/04/2012 at 10:00pm PST.

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1. (1 pt) An exam consists of 47 multiple-choice questions. Each question has a choice of five answers, only one of which is correct. For each correct answer, a candidate gets 1 mark, and no penalty is applied for getting an incorrect answer. A particular candidate answers each question purely by guess-work.

Using Normal approximation to Binomial distribution with continuity correction, what is the estimated probability this student obtains a score greater than or equal to 10?

- A. 0.4947
- B. 0.4682
- C. 0.3442
- D. 0.5053
- E. 0.4855

Answer(s) submitted:

- `E`

(correct)
Correct Answers:

- `E`

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2. (3 pts) The life times, Y in years of a certain brand of low-grade lightbulbs follow an exponential distribution with a mean of 0.6 years. A tester makes random observations of the life times of this particular brand of lightbulbs and records them one by one as either a success if the life time exceeds 1 year, or as a failure otherwise.

Part a)

Find the probability to 3 decimal places that the first success occurs in the fifth observation. ___

Part b)

Find the probability to 3 decimal places of the second success occurring in the 8th observation given that the first success occurred in the 3rd observation. ___

Part c) Find the probability to 2 decimal places that the first success occurs in an odd-numbered observation. That is, the first success occurs in the 1st or 3rd or 5th or 7th (and so on) observation.___

Answer(s) submitted:

- `0.081757`
- `0.0817569`
- `0.36593`

(score 0.666666686534882)
Correct Answers:

- `0.0818`
- `0.0818`
- `0.5521`

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3. (6 pts) 80% of the employees in a specialized department of a large software firm are computer science graduates. A project team is made up of 10 employees.

Part a) What is the probability to 3 decimal digits that all the project team members are computer science graduates? ___

Part b) What is the probability to 3 decimal digits that exactly 3 of the project team members are computer science graduates? ___

Part c) What is the most likely number of computer science graduates among the 10 project team members? Your answer should be an integer. ___

Part d) There are 46 such projects running at the same time and each project team consists of 10 employees as described. On how many of the 46 project teams do you expect there to be exactly 3 computer science graduates? Give your answer to 1 decimal place. ___

Part e) I meet 20 employees at random. What is the probability that the third employee I meet is the first one who is a computer science graduate? Give your answer to 3 decimal places. ___

Part f) I meet 79 employees at random on a daily basis. What is the mean number of computer science graduates among the 79 that I meet? Give your answer to one decimal place. ___

Answer(s) submitted:

- `0.107`
- `0.000786`
- `8`
- `0.036`
- `0.032`
- `63.2`

(correct)
Correct Answers:

- `0.1074`
- `0.0008`
- `8`
- `0.04`
- `0.032`
- `63.2`

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