This PDF is available for convenience. Assignments must be submitted within **WeBWorK** for credit.

Problem 1

Complaints about an Internet brokerage firm occur at a rate of 7 per day. The number of complaints appears to be Poisson distributed.

A. Find the probability that the firm receives 5 or more complaints in a day.

Probability = _____

B. Find the probability that the firm receives 31 or more complaints in a 4-day period.

Probability = _____

Correct Answers:

- 0.827008392117929
- 0.309651226032709

+6pc-1pc

Problem 2

The number of accidents that occur at a busy intersection is Poisson distributed with a mean of 3 per week. Find the probability of the following events.

A. No accidents occur in one week.

Probability = _____

B. 5 or more accidents occur in a week.

Probability = _____

C. One accident occurs today.

Probability = _____

Correct Answers:

- 0.0497870683678639
- 0.184736755476228
- 0.279188167513309

+6pc-1pc

Problem 3

Flaws in a carpet tend to occur randomly and independently at a rate of one every 180 square feet. What is the probability that a carpet that is 7 feet by 13 feet contains no flaws?

Probability = _____

Correct Answers:

- 0.603170387668135

+6pc-1pc
Problem 4

Cars arriving for gasoline at a Shell station follow a Poisson distribution with a mean of 10 per hour.

A. Determine the probability that over the next hour, only one car will arrive.

Probability = _____

B. Compute the probability that in the next 8 hours, more than 28 cars will arrive.

Probability = _____

Correct Answers:

- 0.000453999297624849
- 0.999999999982555

+6pc-1pc
Problem 5

The mean number of patients admitted per day to the emergency room of a small hospital is 2. If, on any given day, there are only 1 beds available for new patients, what is the probability that the hospital will not have enough beds to accommodate its newly admitted patients?

answer: ____
Correct Answers:

- 0.593994150290162

+6pc-1pc
Problem 6

A certain typing agency employs two typists. The average number of errors per article is 4.8 when typed by the first typist and 1.9 when typed by the second. If your article is equally likely to be typed by either typist, find the probability that it will have no errors.

_____
Correct Answers:

- 0.0788991831358276

+6pc-1pc

Problem 7

Given that x is a random variable having a Poisson distribution, compute the following:

(a) $P(x = 3)$ when $\mu = 6$
$P(x) =$ ____

(b) $P(x \leq 1)$when $\mu = 5.5$
$P(x) =$ ____

(c) $P(x > 3)$ when $\mu = 6$
$P(x) =$ ____

(d) $P(x < 5)$ when $\mu = 3.5$
$P(x) =$ ____
Correct Answers:

- 0.0892350783599889
- 0.0265640143500164
- 0.848796117223352
- 0.725444953309605

+6pc-1pc
Problem 8

A math professor finds that when he schedules an office hour for student help, an average of 2.8 students arrive. Find the probability that in a randomly selected office hour, the number of student arrivals is 1.

_____
Correct Answers:

- 0.170268175431121

+6pc-1pc
Problem 9

Assume that the monthly worldwide average number of airplaine crashes of commercial airlines is 2.2. What is the probability that there will be

(a) less than 2 such accidents in the next month? _____

(b) at least 4 such accidents in the next 2 months? _____

(c) exactly 8 such accidents in the next 5 months? _____

Correct Answers:

- 0.354570106759468
- 0.640552227211231
- 0.0887935985167132