New York City College of Technology MAT1372 Exam II review, Halleck, Sp 2012

Actual exam will be about as long as this review.

Part I By hand (calculator ok):

1 A random variable has the following probability distribution:

X 3 1 0 4

P(X) 0.1 0.3 0.4 ?

1. Find the probability when X=4. b) Find the mean and the standard deviation**.**

2. If a fair coin is tossed 7 times find the probability of getting

a) exactly 5 heads b) at least 5 heads

c) repeat parts a and b if the coin is bent so that the chance of getting a head is 0.4.

3. New York State has found that 30% of consumer complaints are valid. The State received 6000 complaints last yr.

a) About how many of them are expected to be valid? (i.e. find the mean).

b) Find the standard deviation.

4. A new restaurant opened up. On average, 6 parties arrive every 10 minutes during peak time on Saturday evening.

a) What is the chance that no parties arrive in a 5 minute period?

b) What is the chance that exactly 1 party arrives in a 5 minute period?

c) What is the chance that at least 2 parties arrive in a 5 minute period?

5. X represents the number of hours working on a computer, Y represents the alertness level on a scale of 1 to 10, 10 being alert, 1 essentially asleep.

X 2 4 4 6

Y 9 3 7 5

a) Find the equation of the regression line for the data. b) Interpret the slope and y-intercept

c) If X = 10, what is the predicted value for Y? d) Find and interpret the coefficient of correlation.

6. If the a probability distribution is in the form of a triangle with peak at 1 and x-intercept 5, find the

a) height of the triangle. b) P(2<x) c) P(3<x<4)

Part II Using Excel

7. The following data represent the number of days absent (X) and final grade (Y) in a statistics course.

a) Find and interpret the coefficient of correlation. b) Find the equation of the regression line.

c) Interpret the slope & y-intercept. d) If Carol has 5 absences, what final grade can she expect?



8. X is normally distributed with mean 40 and standard deviation 8 (use normalized standard distribution Z).

1. What is the probability that X is less than 50?
2. What is the probability that X is greater than 35?
3. What is the probability that X is between 35 and 50?
4. Below what value of X are 15% of the values? (find the zscore, then convert to score).