New York City College of Technology MAT1272 Exam II, Halleck, Sp 2012

Show all work and answers in your blue book [except for 5 a)]. Turn in exam sheet together with your blue book! You may use your formula sheet and a scientific calculator. You may use a graphing calculator but not advanced features such as the binomial probabilities.

1. (15 pts) There are 3 red balls and 2 blue balls in a box.

a) Draw a probability tree for 2 balls selected randomly from the box if the selection is done with replacement.

b) Draw a probability tree for 2 balls selected randomly from the box if the selection is without replacement.

c) If 3 balls are selected without replacement, what is the probability that the first ball is red, the second and the third balls are blue?

2. (15 pts) If a bent coin with probability of a head .3 is tossed 5 times, find the probability of getting

a) exactly 4 heads b) eactly 5 heads c) at most 3 heads [use results from parts a) and b)].

3. (15 pts) In a statistics club, there are 7 sophomores, and 3 freshmen.

1. In how many ways can the club form a committee of 3 students without regard to rank?
2. In how many ways can the club form a committee which consists of 2 sophomores and 1 freshman?
3. The club has decided to elect a president, vice president, treasurer and secretary. In how many ways can they do this if the pres and vp must be sophomores and the treasurer and secretary must be freshman?

4. (20 pts) A 21 sided die is rolled (icosahedron). What is the probability that the role is

a) even? b) a multiple of 3? c) even and a multiple of 3?

d) even or a multiple of 3? [use results from parts a), b) & c)]

5. (35 pts) The following data represent the number of days absent (X) and final grade (Y) in a statistics course.

a) Use the graph paper to draw the scatter plot. b) Find and c) interpret the coefficient of correlation. d) Find the equation of the regression line. e) Interpret the slope & f) y-intercept. g) If Carol has 5 absences, what final grade can she expect?

