MATH 302 PROB. & STATS II WORKSHEET 1 ½ NAME:_____

(PLEASE PRINT LEGIBLY)

If an answer does not exist explain why it does not exist.

1. Let $X, Y$ be jointly distributed such that the joint probability mass function, $k_{xy}((x, y))$ is defined as:

$$k_{xy}((x, y)) = \begin{cases} \frac{x+y}{21} & x \in \mathbb{N}_3 \quad y \in \mathbb{N}_2 \\ 0 & \text{else} \end{cases}$$

A. Explicitly find the p. m. f. (meaning put it in chart form, please).
B. Try to draw the 3-dimensional histogramme.

C. Find $\Pr(X > 1)$ D. Find $\Pr(X = 1 \wedge Y = 2)$ E. Find $\Pr(X < 1)$ F. Find $\frac{\partial k}{\partial x}$

2. Suppose you have an urn with 3 red, 4 blue, and five green balls. You draw 3 balls from the urn. Let R be the discrete random variable associated with the number of red balls chosen and B be the discrete random variable associated with the number of blue balls chosen.

A. Create a well defined joint probability mass function, $f_{rb}((r, b))$ that defines the probability of choosing a number of read balls and a number of blue balls (meaning put it in chart form, please, one does not necessarily have to express p.m.f.s in algebraic form).

B. Find $\Pr(B > 1 \wedge R = 2)$ C. Find $\Pr(R < 2 \wedge B < 2)$ D. Find $\Pr(R = 2 \wedge B > 1)$

E. Find $\Pr(R + B = 3)$ F. Find $\Pr(R + B = 2)$