Quiz 3

Form A Name _____

Math 130B, 5 PM

Please justify all your answers April 13, 2022

Please also write your full name on the back

1. Let X and Y be two jointly continuous random variables with joint probability density function given by

$$f_{X,Y}(x,y) = \begin{cases} 1 + cxy, & \text{if } 0 \le x \le 1,\ 0 \le y \le 2x \\ 0, & \text{otherwise} \end{cases}.$$

   (a) Find the constant c.

   (b) Are the variables X and Y independent?

Quiz 3

Form B Name _____

Math 130B, 6 PM

Please justify all your answers April 13, 2022

Please also write your full name on the back

1. Let X and Y be two jointly continuous random variables with joint probability density function given by

$$f_{X,Y}(x,y) = \begin{cases} c + xy, & \text{if } 0 \leq x \leq y,\ 0 \leq y \leq 1 \\ 0, & \text{otherwise} \end{cases}.$$

   (a) Find the constant c.

   (b) Are the variables X and Y independent?