3.) $f(x,y) = 2$ when $0 \le x \le y \le 1$

otherwise $f(x,y) = 0$

Variables are independent when:

$f(x,y) = f(x)\,f(y)$

$f(x) = \int_x^1 f(x,y)\,dy$

$= 2y\,|_x^1$

$= 2x - 2$

$f(y) = \int_0^y f(x,y)\,dx$

$= 2x\,|_0^y$

$= 2y$

$(2x-2)(2y) \neq 2$

$\therefore f(x,y) \neq f(x)\,f(y)$

$\therefore$ x and y are not independent