sample q#1

Time spent by two clerks is defined by

$$f(x,y) = \begin{cases} x+y & \text{if } 0 \le x \le 1 ; 0 \le y \le 1 \\ 0 & \text{else} \end{cases}$$

a) find marginal probability distribution $f_1(x)$ and $f_2(y)$

b) are two random variable x,y independent? why?

c) are x,y correlated? why?

d) suppose proportion "d" of dead time (time when no assigned duties are being performed) for two clerks is given by the relation $d = 1 - \frac{(x+y)}{2}$ find E(d), the expected value of d.