Probability & Statistics

x \ y	0	1	2	3	Total
0	0.2	0.2	0.05	0.05	0.5
1	0.2	6.1	0.1	0.1	0.5
Total	0.4	0.3	0.15	0.15	1

a)

X	0	1
P(X)	0.5	0.5

y	0	1	2	3
P(y)	0.4	0.3	0.15	0.15

b) $P(x=0, y=0,1,2,3) =$

$0.2 + 0.2 + 0.05 + 0.05 = 0.5$

c) let $e =$ no of errors.

ε	0	1	2	3	4
P(ε)	0.2	0.2	0.15	0.15	0.1

d) $P(x=1 \wedge y=2) \neq P(0.5) \times 0.15$

$0.1 \neq 0.075$

Hence, not independent