3)

		0	1	2	3	4
y	2	10%	6%	9%	15%	6%
	3	8%	12%	14%	9%	11%

Compute the joint entropy of X & Y

X & Y jointly distributed to pmf $p(x,y)$

Joint entropy is:

$$H(X,Y) = -\sum_{x,y} p(x,y) \log(p(x,y))$$

$\log_2$ is assumed

$$H(X,Y) = [-0.1 \log(0.1)] + [-0.08 \log(0.08)]$$
$$+ [-0.06 \log(0.06)] + [-0.12 \log(0.12)]$$
$$+ [-0.09 \log(0.09)] + [-0.14 \log(0.14)]$$
$$+ [-0.15 \log(0.15)] + [-0.09 \log(0.09)]$$
$$+ [-0.06 \log(0.06)] + [-0.11 \log(0.11)]$$

$$H(X,Y) = 0.33 + 0.29 + 0.24 + 0.37 + 0.31 + 0.40 + 0.41 + 0.31 + 0.24 + 0.35 = 3.25$$

The joint Entropy is 3.25