4) Compute the entropy of X given Y

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

Rebuild the table:

	X				
	0	1	2	3	4
	18%	18%	23%	24%	17%

$p(0|Y) = 18\%$
$p(1|Y) = 18\%$
$p(2|Y) = 23\%$
$p(3|Y) = 24\%$
$p(4|Y) = 17\%$

$$H(X|Y) = [-0.18 \log(0.18)] + [-0.18 \log(0.18)] + [-0.23 \log(0.23)] + [-0.24 \log(0.24)] + [-0.17 \log(0.17)] = 0.45 + 0.45 + 0.49 + 0.49 = 1.88$$

$$\boxed{H(X|Y) = 1.88}$$