Two safety inspectors inspect a new building and assign it a “safety score” of 1, 2, 3, or 4. Suppose that the random variable X is the score assigned by the first inspector and the random variable Y is the score assigned by the second inspector, and that they have a joint probability mass function given in the following Figure:

Y \ X	1	2	3	4
1	0.09	0.03	0.01	0.01
2	0.02	0.15	0.03	0.01
3	0.01	0.01	0.24	0.04
4	0.00	0.01	0.02	0.32

i) Show that this is a valid joint probability mass function.
ii) $P(X<2,Y<3) = ?$
iii) Find marginal probability mass function.
iv) $V(x) = ?$
v) $E(x|y=2) = ?$
vi) Calculate the correlation and write down the comment.