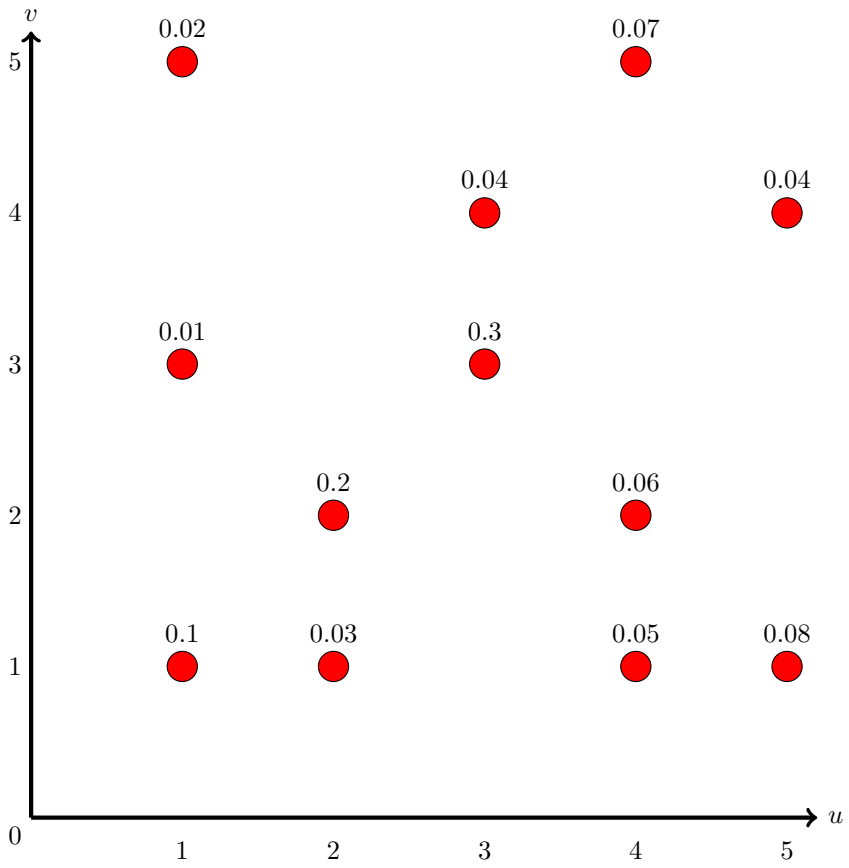
Suppose the joint probability mass function $p_{X,Y}(u, v)$ of random variables X and Y is shown below. What is the probability that X is greater than 2, given that Y is greater than 4 ?



(a) 7/9

(b) 0.07

(c) 0.09

(d) 0.13

(e) 2/9

(f) 0.64

(g) 0.11

(h) 0

(i) 1

(j) None of these

Solution:
$P(X > 2|Y > 4) = \frac{P(X>2,Y>4)}{P(Y>4)} = \frac{p_{X,Y}(4,5)}{p_{X,Y}(1,5)+p_{X,Y}(4,5)} = \frac{0.07}{0.07+0.02} = \frac{7}{9}$.