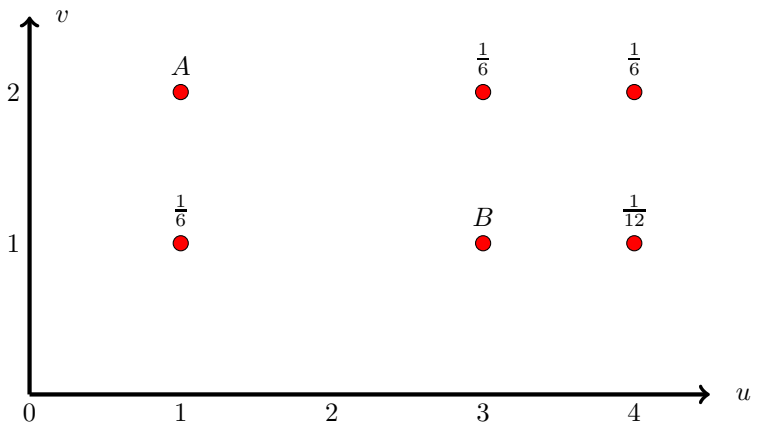
If independent random variables X and Y have joint probability mass function $p_{X,Y}(u,v)$ shown below, then what is the probability that $XY = 3$?



(a) None of these

(b) 1/48

(c) 1/2

(d) 1/3

(e) 1/4

(f) 2/3

(g) 3/4

(h) 1/6

(i) 1/24

(j) 5/12

(k) 5/6

(l) 1/9

(m) 7/12