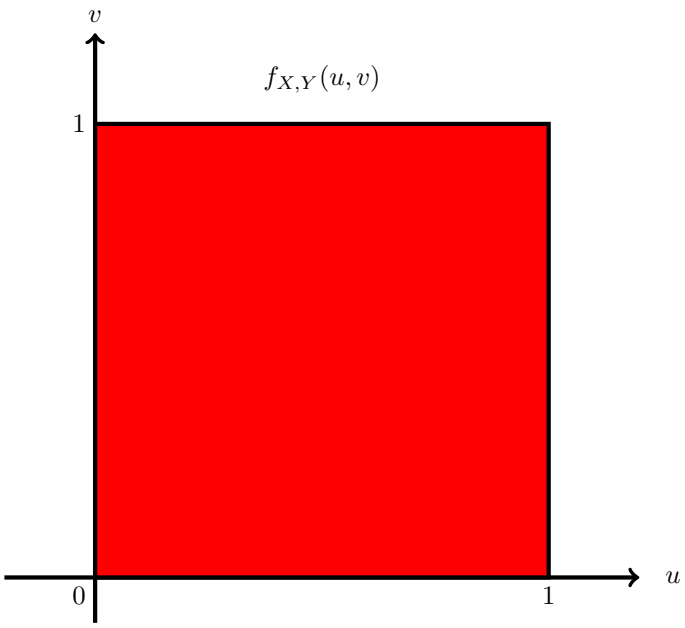
Suppose random variables X and Y have a joint probability density function $f_{X,Y}(u,v) = 2u$ in the red region shown below, and zero elsewhere. What is the probability that Y is greater than X ?



(a) 1/3

(b) 1/6

(c) 2/3

(d) 1/2

(e) 5/6

(f) 1/12

(g) 1/4

(h) 3/4

(i) 5/12

(j) 1/8

(k) 3/8

(l) None of these