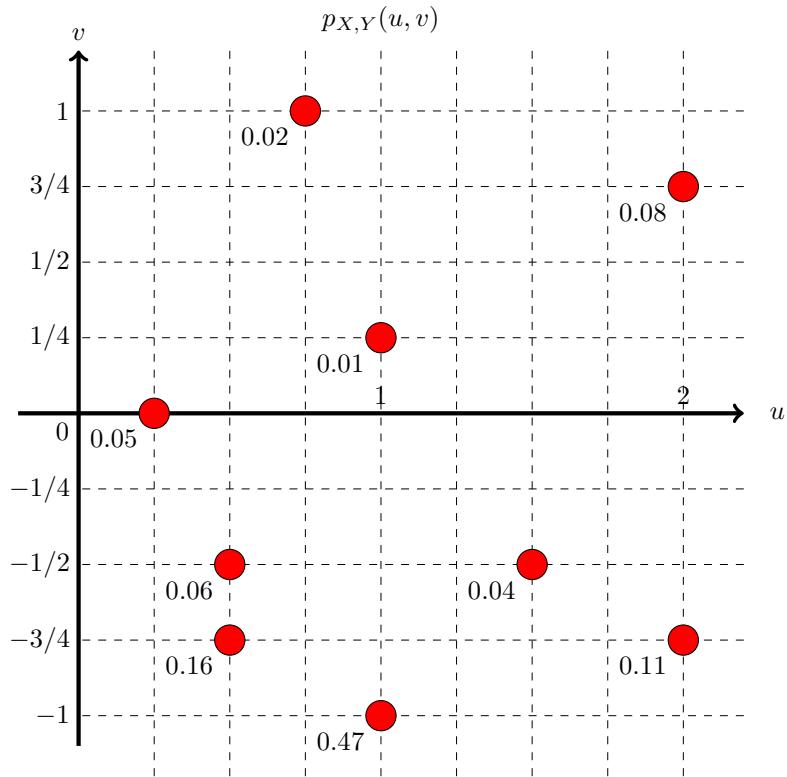
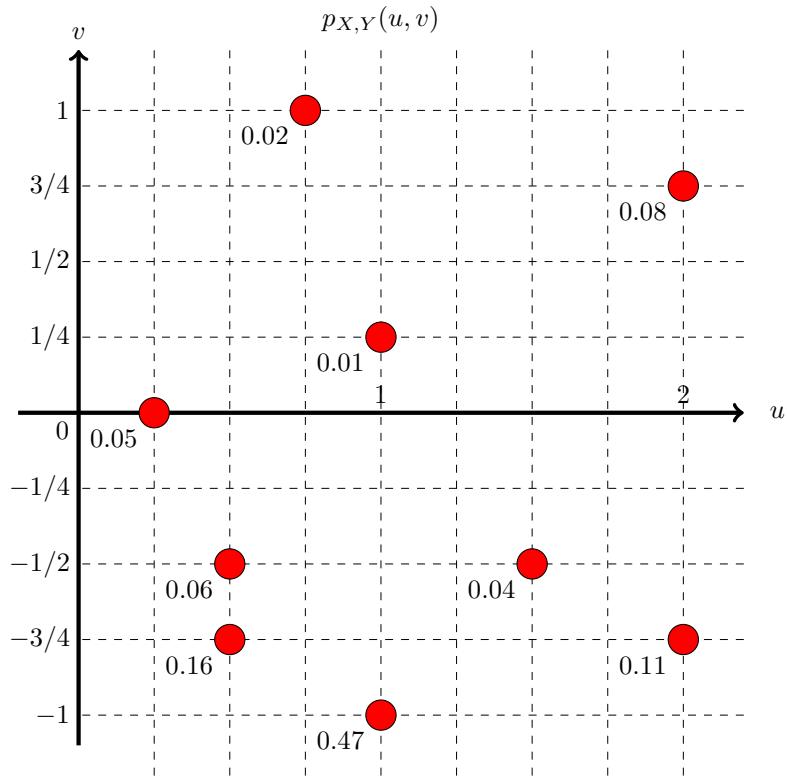


Random variables X and Y have the joint probability mass function shown below. What is the probability that $X^2 + Y^2$ is less than one?



- (a) 0.27
- (b) 0.73
- (c) 0.59
- (d) 0.62
- (e) 0.51
- (f) 0.71
- (g) 0.86
- (h) 0.05
- (i) 0.11
- (j) 0.35
- (k) 1
- (l) 0
- (m) None of these

Random variables X and Y have the joint probability mass function shown below. What is the probability that X is greater than 2^Y ?



- (a) 0.7
- (b) 0.59
- (c) 0.62
- (d) 0.51
- (e) 0.71
- (f) 0.86
- (g) 0.92
- (h) 0.75
- (i) 0.35
- (j) 1
- (k) 0
- (l) None of these

The joint probability density function of random variables X and Y is $f_{X,Y}(u, v) = 2e^{-u-2v}$ whenever $u, v > 0$, and is zero otherwise. What is the probability that $X + Y$ is less than 1 ?

- (a) $(1 - e^{-1})^2$
- (b) $1 - e^{-1}$
- (c) $(1 - e^{-2})^2$
- (d) $1 - e^{-2}$
- (e) $1 - e^{-1} - e^{-2}$
- (f) $1/e$
- (g) $1/2$
- (h) $1/e^2$
- (i) e^{-3}
- (j) $1 - e^{-3}$
- (k) $1 + 2e^{-1} + e^{-2}$
- (l) None of these