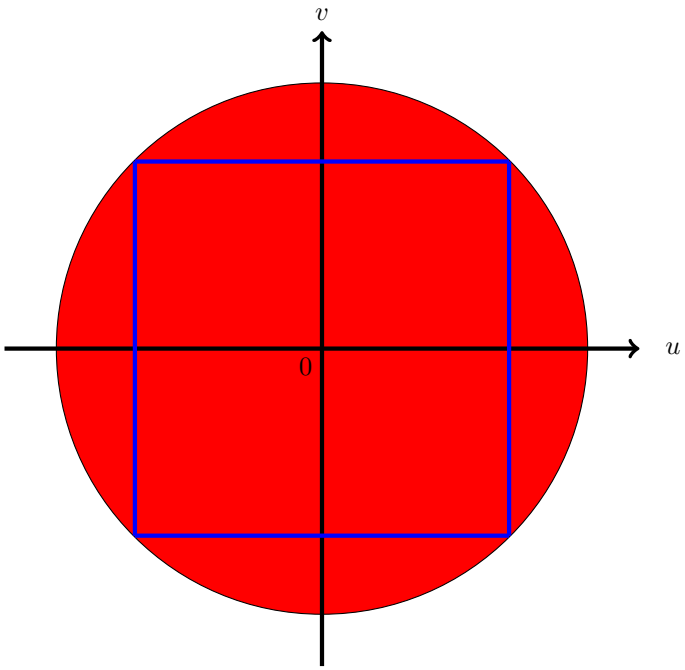
Suppose a dart is thrown at the plane and lands at location (X, Y), where X and Y are random variables whose joint probability density function is uniform in the red circle shown below. What is the probability that the dart lands inside the inscribed blue square shown?



(a) $2/\pi$

(b) $1/\pi$

(c) $\pi/2$

(d) π

(e) $\sqrt{2}/\pi$

(f) $4/\pi$

(g) 4

(h) $\sqrt{2}$

(i) 2

(j) $2\sqrt{2}/\pi$

(k) 1

(l) None of these