N.I. Lobachevsky State University
of Nizhni Novgorod

Probability theory and mathematical statistics:

Geometric probability — Practice

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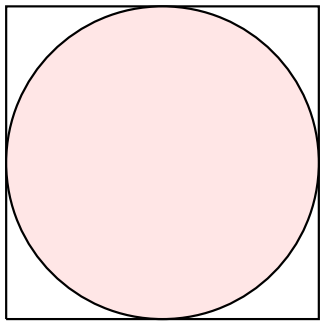
A point is chosen at random from the square below. What's the probability the point belongs to the red circle?



A point is chosen at random from a square. Square's side equals $2a$. What's the probability that the distance between the point and the nearest side is less than $\frac{a}{3}$ (event A)? What's the probability that the distance between the point and the nearest side is less than $x \in R^1$ (event B_x)?

A coin falls on a chequed paper. Check's size is d, coin's radius is r ($2r < d$). What's the probability the coin falls clearly inside a check?

Ann and Bart have a date tonight. They are to meet each other between 8 p. m. and 9 p. m. Ann waits for 10 minutes for Bart and Bart waits for 20 minutes for Ann. What's the probability they'll meet?

A stick of length l is broken at two places randomly chosen. With what probability three pieces can make a triangle?

Real numbers p, q are chosen at random between 0 and 1. What's the probability equation $x^2 + px + q = 0$ has real roots?