Fall 2013 Welcome

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The Principle of Maximal Ignorance

$$xe^{x-1}$$

Talking Points

Grade Distributions
Email
Accommodations

Paradox: 3 distinct ways of selecting a random chord

What is the probability that a random chord of a circle is larger than the side of the inscribed equilateral triangle?

1. Random endpoints. Answer 1/3
2. Throwing sticks: Random radii. Answer 1/2
3. Throwing darts: Random midpoints. Answer 1/4

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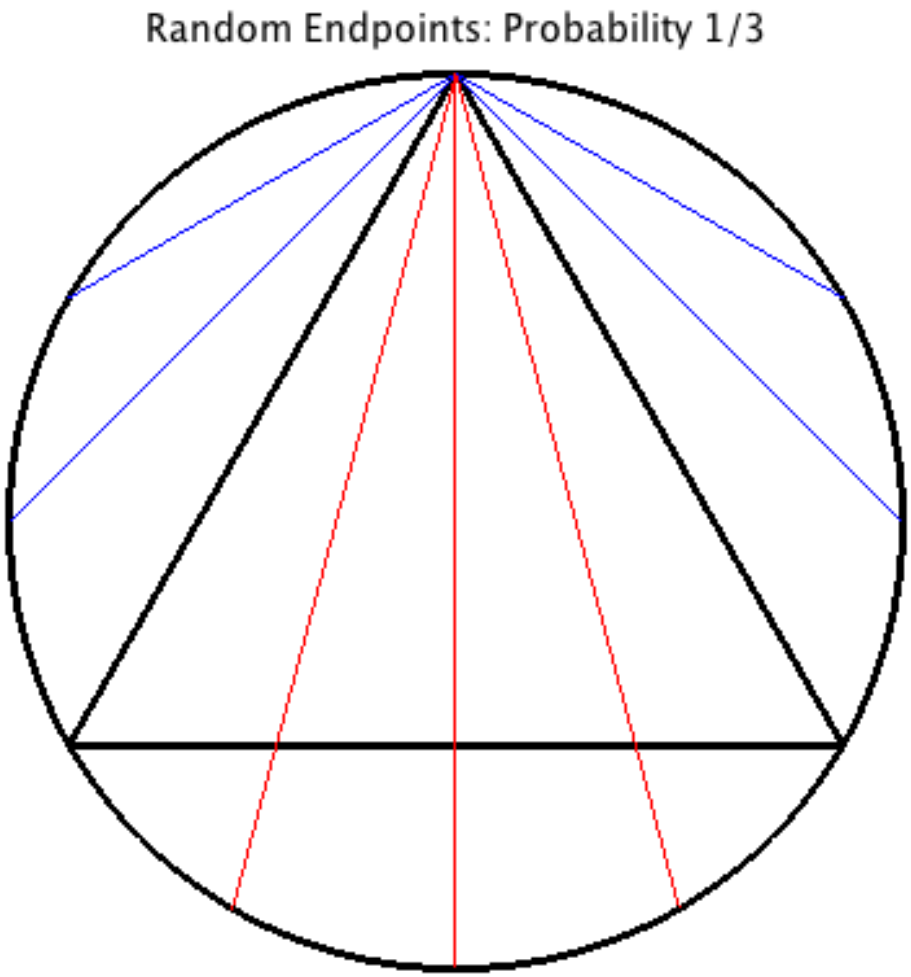
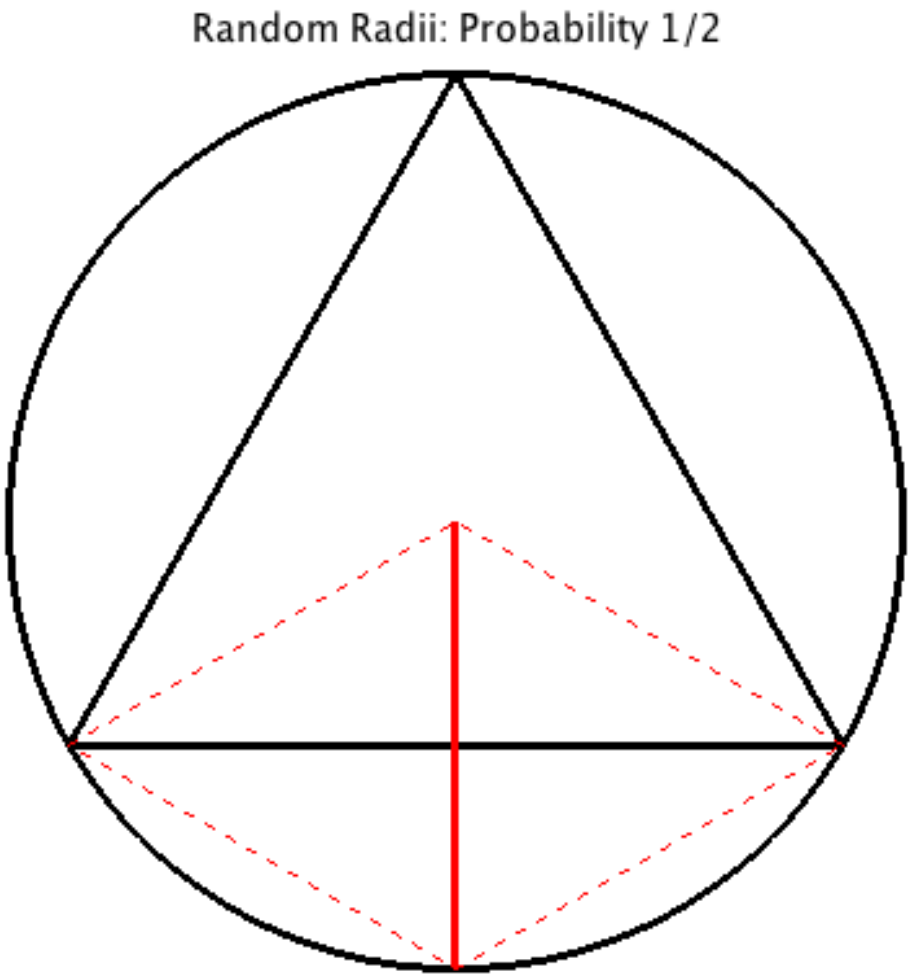
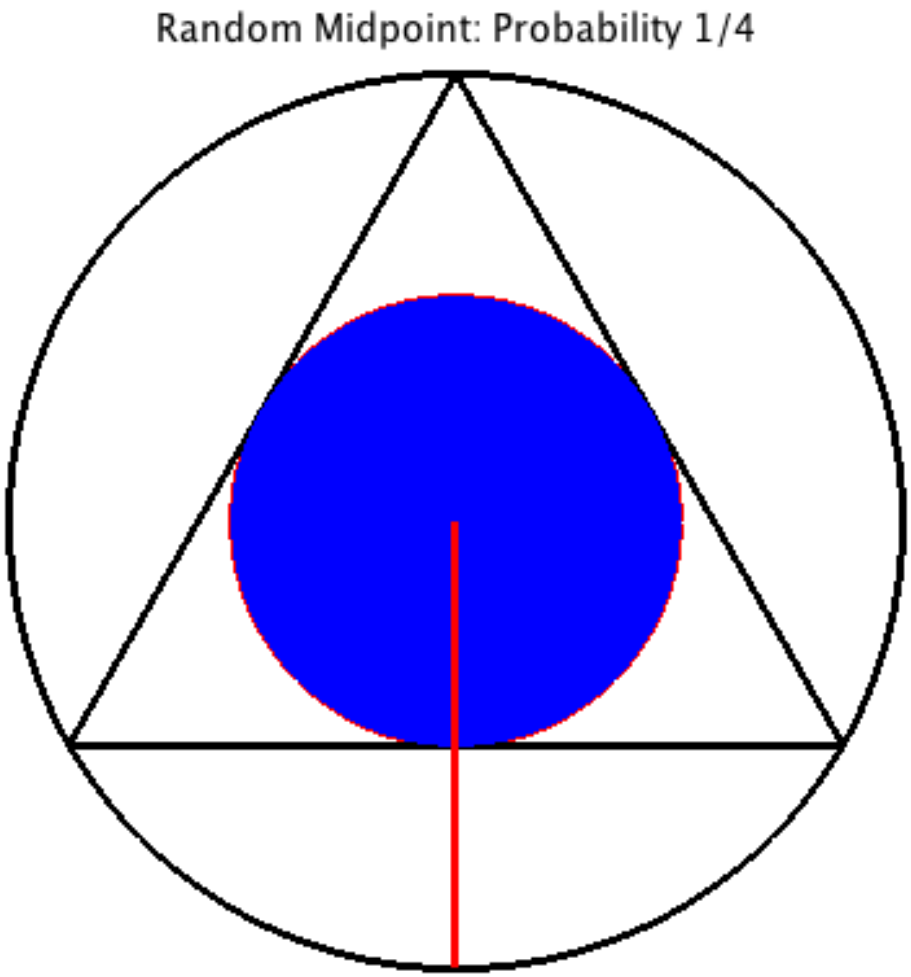
Random Endpoints



Random Radii



Random Midpoints



Maximal Ignorance

The chord paradox is due to Joseph Bertrand (1889). Both Borel (1909) and Poincaré (1912) and 8 others comment before 1965.
Edwin Jaynes (1973) proposed his "maximal ignorance" solution. The solution must be translation and scale invariant, hence it is random radii.
The actual solution uses the integral equations of the invariance to derive the random radii solution.

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How many A's?

More than a quarter, will be a horror.