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circle line picking

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Circle line picking is the activity of choosing two points on the circumference a unit circle and calculating probabilities and averages about the chord formed by connecting those two points.

The length of the line segment between the two points is $\sqrt{2 - 2\cos\theta}$, where θ is the angle of the central vertex of a triangle formed by connecting the two points to the center. On average, this works out to $\frac{4}{\pi}$.