

## Problem 9: Random Chord problem

Due date: 11 April 2024

- 7a. Consider a circle of radius  $R$  and choose two points, A and B, randomly on the circumference of the circle to form a chord AB. Calculate the distribution of chordal lengths so that the minimum distance between the center of the circle and the chords is greater or equal to half of the radius.
- 7b. Show your results by plotting the distribution  $P(d_{AB})$  versus  $d_{AB}$ , where  $d_{AB}$  is the length of the chord AB.
- 7c. Check your results by using at least two different methods.