PROBLEM CORNER

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Consider the unit circle and its inscribed regular hendecagon \(A_1A_2A_3 \ldots A_{10}A_{11}\).

**Problem 1**

Compute the product \(|A_1A_2| \cdot |A_1A_3| \ldots |A_{11}A_{11}|\).

![Figure 1 – a regular hendecagon and its diagonals](image)

**Problem 2**

Can you prove that the diagonals \(A_1A_5\), \(A_2A_9\) and \(A_3A_{11}\) are concurrent?