1. In the plane, consider an infinite strip of width \( d \). (The region between two parallel lines.) Suppose every triangle of area 1 will fit inside the strip, after suitable translation and rotation. What is the minimum possible width \( d \)?

2. Let \( ABC \) be a triangle with acute angles \( \alpha, \beta \) and \( \gamma \) such that

\[
\tan(\alpha - \beta) + \tan(\beta - \gamma) + \tan(\gamma - \alpha) = 0.
\]

Prove that \( ABC \) is isosceles.

3. The number 2010 is written as a sum of two or more positive integers. What is the maximum possible product of these integers?

4. Let \( A \) be a \( 2010 \times 2010 \) matrix such that in every row and in every column, exactly two entries are equal to 1 and the rest are 0. Prove that the determinant of \( A \) is either 0 or \( \pm 2^m \) where \( m \) is even.

5. Evaluate \( \lim_{n \to \infty} n \sin(2\pi n!e) \).

6. Let \( \alpha \) be a real number. Find \( \lim_{n \to \infty} \left( \begin{array}{cc} 1 & \alpha/n \\ -\alpha/n & 1 \end{array} \right)^n \).