Problemas Sortidos

Guilherme Zeus Dantas e Moura

zeusdanmou@gmail.com

1. Determine the probability that two positive numbers, x and y, both less than 1, written down at random, together with unity, yield a trio of numbers $(x, y, 1)$ which are the sides of an obtuse-angled triangle.

2. Two people agree to meet at a given place between 12:00 and 13:00. By agreement, the first to arrive will wait 15 minutes for the second, after which he will leave. What is the probability that the meeting actually takes place if each of them selects his moment of arrival at random during the interval from 12:00 to 13:00?

3. A rod is broken into three pieces; the two break points are chosen at random. What is the probability that the three pieces can be joined at the ends to form a triangle?

4. Three points, A, B, C, are chosen at random on the circumference of a circle. What is the probability that $\triangle ABC$ is acute-angled?

5. A point P is chosen arbitrarily inside an equilateral triangle. Perpendiculars from P to the sides of the triangle meet these sides at points X, Y, Z. What is the probability that a triangle with sides PX, PY, PZ exists?