

Problem Set 11

April 13, 2026

Problem 1. Let $s > t \geq 1$ be distinct odd integers with $\gcd(s, t) = 1$. Set $a = st$, $b = \frac{s^2-t^2}{2}$ and $c = \frac{s^2+t^2}{2}$. Show that (a, b, c) is a primitive Pythagorean triple.

Problem 2. Let p be a prime number. Show that \sqrt{p} is irrational.