Problem Set 10

November 18, 2024

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.