

Sommersemester 2025 Homework 6

1. QUESTIONS

- (1) Name one thing which you have found challenging in the class this week and one thing you think you understood well.
- (2) Find a positive integer which has at least 3 distinct representations as a sum of two squares (up to signs and the order of the summands). Hint: You have proved in class that a prime p can be written as a sum of two squares if and only if it is of the form $p = 4k + 1$ for some integer k . You also showed last week that if m and n are sums of two squares, then so is the product mn . So, to answer this question, choose an integer which has three distinct prime factors each of the form $4k + 1$.