
CS 131 – SPRING 2017 – LAB 5

Question 1 Prove that the sum of an irrational number and a rational number is irrational.

Question 2 Show that these statements about the integer x are equivalent: (i) $3x + 2$ is even, (ii) $x + 5$ is odd, (iii) x^2 is even.

Question 3 Prove the triangle inequality, which states that if x and y are real numbers, then $|x| + |y| \geq |x + y|$.

Question 4 Prove that there are 100 consecutive positive integers that are not perfect squares. Is your proof constructive or nonconstructive?