

CS 381 Homework 1

Hand in the following questions:

1. Prove the following statement:

If $m + n$ is odd for integers m and n , then $m \times n$ is even.

2. Prove that if x^n is irrational for any arbitrary positive integer n , then x is irrational.

3(a) Given a 5 pints pail and an 8 pints pail, find a way to get 1 pint in the 5 pints pail. You can fill or empty the pails and you have unlimited supply of water.

(b) Given a 2 pints pail and a $2m$ pints pail, where m is a positive integer, is it possible to get 1 pint in the 2 pint pail? No justification is necessary. But think about how to justify your answer.

Due September 9, 2013 the end of the day.

NO late hand ins are accepted.

You may discuss these questions among yourselves and/or with me. But you must write your answers in your own words.