Exercises for Lecture 2

Today we discuss the binary numbers, and number bases in general.

Binary Arithmetic

1. Covert these decimal numbers to binary: 2017, 24816, 11111.
2. Convert these binary numbers to decimal: 1010101, 10101010, 11011011
3. In binary numbers, the even numbers end in a zero. Is this true for any base?
4. Add 10101010 and 11011011 in binary, and check your result in base 10.
5. Multiply 10101010 and 11011011 in binary, and check your result in base 10.

Arithmetic in other bases

1. Convert the decimal 1776 to base 3, base 5, and base 11.
2. Find a three digit sequence which refers to the same number in base 3 and base 5, or prove that no such thing can exist.

Don't do this problem

1. A man had a circular pasture and he wished to divide it into four parts of equal area by three fences, each of the same length. How did he do it?