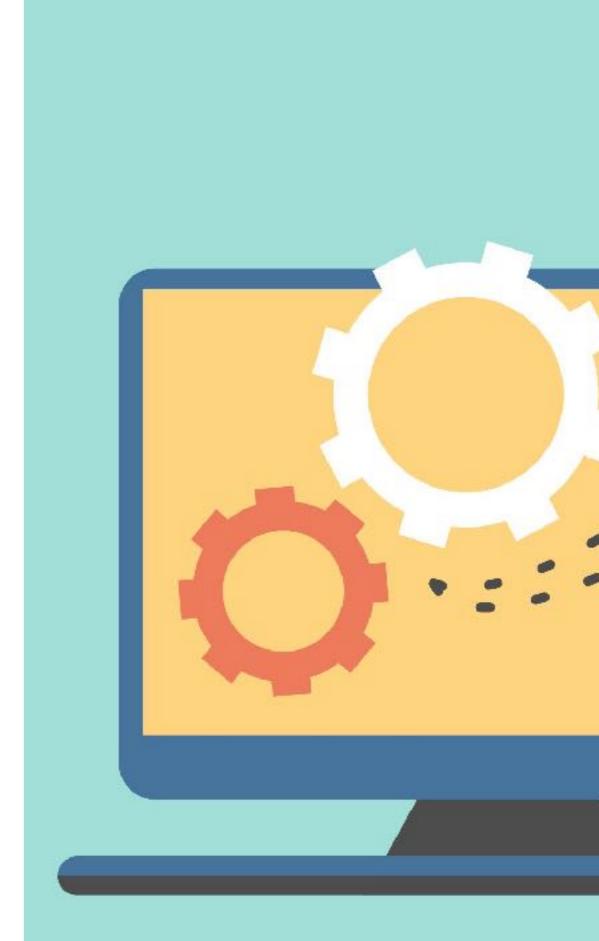# INFORMATIK I

Tutorium 13.12.2016

BESPRECHUNG

Blatt 7

PROJECT EULER

Die ersten Probleme

PROBLEM 1: MULTIPLES OF 3 AND 5

If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23.

Find the sum of all the multiples of 3 or 5 below 1000.

➤ Lösung: 233168

PROBLEM 2: EVEN FIBONACCI NUMBERS

Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

1, 2, 3, 5, 8, 13, 21, 34, 55, 89, …

By considering the terms in the Fibonacci sequence whose values do not exceed four million, find the sum of the even-valued terms.

➤ Lösung: 4613732

The prime factors of 13195 are 5, 7, 13 and 29.

What is the largest prime factor of the number 600851475143 ?

➤ Lösung: 6857