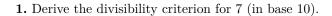
Exercise sheet 5

First, some exercises we were not able to finish last time



2. Find the remainder when you divide

$$4^{254} + 2 \cdot 7^{123} - 3 \cdot 11^{102}$$

by 5

 $Now\ something\ new$

- **3.** Express the number 231 in base
- a) 2

b) 3

c) 5

d) 16

- **4.** Compute the prime decomposition of $68\,310$.
- **5.** Prove that $n^2 \equiv 1 \pmod{24}$ for every $n \in \mathbb{N}$, $n \perp 24$.