

Homework on §8

Due: Thursday, February 28

A. Silverman 8.4.

B. Let $n \geq 0$.

1. Prove that

$$x^{n+1} - 1 = (x - 1)(x^n + x^{n-1} + \cdots + 1).$$

2. Prove that

$$x^{n+1} - y^{n+1} = (x - y) \sum_{i=0}^n x^i y^{n-i}.$$

C. 1. What day of the week is February 21, 2030?

2. Write a program which takes as input a year n with $2001 \leq n \leq 2099$ and outputs the day of the week of February 21 in year n .