ASSIGNMENT 3: THE PRIME POLYNOMIAL THEOREM
DUE DATE: NOVEMBER 28, 2018

1. Let $\pi_q(n)$ be the number of irreducible monic ("prime") polynomials of degree n in $\mathbb{F}_q[t]$. Compute $\pi_q(3)$ and $\pi_q(4)$

2. Show that

$$\sum_{d|f} \Lambda(d) = \deg f$$

where the sum is over all monic divisors of $f \in \mathbb{F}_q[t]$, and the von Mangoldt function $\Lambda(g) = \deg P$, if $g = P^m$ is a power of a prime polynomial, and is zero otherwise.