Week #10 Exercises

Prime Numbers

A natural number, p, is prime if it has exactly two divisors, 1 and p.

The first dozen primes are:
2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37.

1. Determine whether $2 * 3 * 5 * 7 + 1$ is prime.
2. Find the greatest prime less than 700.
3. Express the number 37037 in terms of powers of primes i.e. express 37037 in the form: $2^{k1} * 3^{k2} * 5^{k3} * \cdots * p_n^{kn}$ where p_n is the n^{th} prime and $kn \in \mathbb{N}$.