1. (a) Use Mathematica's `PrimeQ[ ]` command to verify that 617 is prime

   (b) Use the Extended Euclidean algorithm (by hand) to find $5^{-1} \mod 617$

   (c) Use Fermat's Little Theorem and the square and multiply algorithm to find $5^{-1} \mod 617$

2. Calculate $a^{n-1} \mod n$ in each case (Using Mathematica is fine).
   What does this tell you about the primality of n?

   (a) $n = 85073$, $a = 2$

   (b) $n = 85073$, $a = 317$

   (c) $n = 3395081$, $a = 13$