1. Compute the residues of the following problems
   (a) $43 \mod 5$
   (b) $21 \mod 5$
   (c) $43 \mod 7$
   (d) $21 \mod 7$
   (e) $43 \mod 11$
   (f) $21 \mod 11$
   (g) $43 \mod 13$
   (h) $21 \mod 13$
   (i) $43 \mod 17$
   (j) $21 \mod 17$
2. Find the GCD for the following sets of values
   (a) 23480 and 32400
   (b) 73847 and 25094
   (c) 123456789 and 987654321
3. Find the inverse for each of these values
   (a) $13^{-1} \mod 461$
   (b) $2^{-1} \mod 991$
   (c) $1086^{-1} \mod 1087$
4. Solve the following set of congruences:
   $x \equiv 1 \mod 3$
   $x \equiv 4 \mod 5$
   $x \equiv 5 \mod 7$
5. Can you think of a clever way to find a solution to this system?
   $x \equiv 2 \mod 3$
   $x \equiv 4 \mod 5$
   $x \equiv 6 \mod 7$