1. Recall our algorithm (described below in pseudocode) for computing the binary equivalent of a given nonnegative integer.
   (i) Read the number $n$ given as input.
   (ii) If $n$ is even, output 0. Replace $n$ by $n/2$.
   (iii) If $n$ is odd, output 1. Replace $n$ by $(n - 1)/2$.
   (iv) If $n$ is 0, STOP. Otherwise go to Line 2
   
   (a) Write down the sequence of values that $n$ takes for input 69.

   (b) Write down the output produced by this algorithm for input 69.

2. Euclid’s algorithm for computing the GCD of two non-negative integers can be described in pseudocode as follows:
   (i) Read the numbers $m$ and $n$ given as input.
   (ii) If $m = n$ then output $m$ and STOP.
   (iii) If $m > n$ replace $m$ by $m - n$.
   (iv) If $n > m$ replace $n$ by $n - m$.
   (v) Go back to Line 2.
   
   (a) Write down the sequence of values that $m$ and $n$ take for input 40, 28.

   (b) Write down the output produced by this algorithm for input 40, 28.