1. Write a program that computes the greatest common divisor of two numbers \( x \) and \( y \) using the Euclidean algorithm. The Euclidean algorithm is defined as follows: if \( x = y \), then return \( x \) (or \( y \)), otherwise \( gcdea(x, y) = gcdea(x - y, y) \) where \( x > y \).

2. Write a function \texttt{noOfElem} that counts the number of elements in a list. Your function should return the same result as the function \texttt{length}. Next, use \texttt{noOfElem} to write a function \texttt{countElem} which counts how many times a given element appears in the list. Do not use the function \texttt{length}. You may use other functions, though.

3. (a) Write a function that takes two lists \( x \) and \( y \) as input and returns \texttt{True} if \( x \) is a prefix of \( y \) (otherwise it returns \texttt{False}).
For example,
- \([\ ]\) is a prefix of any list
- \([3,5]\) is a prefix of \([3,5,10,9,8]\)
- \([3,5,7]\) is not a prefix of \([3,5]\)
- \([2,3]\) is not a prefix of \([1,2,3,4]\)
- non-empty lists are never a prefix of \([\ ]\)

(b) Write a function that takes two lists \( x \) and \( y \) as input and returns \texttt{True} if \( x \) is a subsequence of \( y \) (otherwise it returns \texttt{False}).
For example,
- \([\ ]\) is a subsequence of any list
- \([3,5]\) is a subsequence of \([3,5,9,8]\)
- \([3,5,7]\) is not a subsequence of \([3,5]\)
- \([2,3]\) is a subsequence of \([1,2,3,4]\)
- non-empty lists are never a subsequence of \([\ ]\)