1. Find an average and standard deviation of n integers. First input n and then input the integers. Possible algorithm is given here. Notice use of the variable Counter to control the loop.

   (a) `Input` n
   (b) `Sum = 0`
   (c) `SquaredSum = 0`
   (d) `Counter = 0`
   (e) `if Counter >`n `goto step k`
   (f)   `Input` a
   (g)   `Add` a `to Sum`
   (h)   `Add` a^2 `to SquaredSum`
   (i)   `Increase counter by one`
   (j)   `goto step e`
   (k) `Average = Sum/`n
   (l) `Variance = SquaredSum/`n `- Average*Average`
   (m) `print Average, Variance`
   (n) `end`

2. Generate all terms of Fibonacci sequence which are less than m. Fibonacci sequence is defined by a recursion relation

$$a_0 = a_1 = 1$$
$$a_n = a_{n-1} + a_{n-2}$$

   for $n \geq 2$. Here we donot know, in advance, how many terms need to be generated. Notice the condition used to stop the loop.

   (a) `Input` m
   (b) `a0 = a1 = 1`
   (c) `Print a0, a1`
   (d) `a2 = a0 + a1`
   (e) `if a2 >`m `goto step k`
   (f)   `print a2`
   (g)   `a0 = a1`
   (h)   `a1 = a2`
   (i)   `a2 = a0 + a1`
   (j)   `goto step e`
   (k) `end`

3. A class of 10 students have finished their exam. Input their marks and grade them based on the following table.

   <30 Fail, >= 30 and <60 Pass, >=60 and <80 Good, >= 80 Excellent.

4. Calculate sum of the first n terms of the Taylor series expansion of $\sin(x)$. Input n, x. Print the sum and remainder.

5. Input a positive number and determine if it is a prime.