1. Given two positive integers a, b. Find the greatest common divisor of a, b.
2. Given two positive integers a, b. Find the least common multiple of a, b.
3. Given a positive integer x. Perform primality test on x.
4. Given a positive integer x. Check whether x is a square number.
5. Given a positive integer x. Check whether x is a perfect number.
6. Given two positive integers a, b. Find the greatest common divisor of a, b.
7. Given two positive integers a, b. Find the least common multiple of a, b.
8. Given a positive integer x. Perform primality test on x.
9. Given a positive integer x. Check whether x is a square number.
10. Given a positive integer x. Check whether x is a perfect number.
11. Input two integers a, b. Output the maximum of a, b.
12. Input three integers a, b and c. Output the maximum of a, b, c.
13. Input three integers a, b and c. Output a, b, c in ascending order (can only use up to 2 temporary variables).
14. Write program to read in an integer n having 3 digits. Print out the position of the maximum digits.

    Eg: $n = 291$. Maximum digits is located at the tens position (9).
15. Write program to read in an integer n having 3 digits. Print out the digits in ascending order.

    Eg: $n = 291$. Output 129.
16. Write program to read in a positive integer n. Output the first n primes.
17. Write program to count the number of factors of a positive integer n.

    Eg: $n = 12 \rightarrow$ Number of factors = 6
18. A perfect number n satisfied the sum of all its factors (excluding itself) is equal to n. Output all perfect numbers lesser than 5000.

    Eg: 6 is a perfect number since $1 + 2 + 3 = 6$.

19. Write a function to calculate the $n\text{-}th$ element of the Fibonacci sequence based on the following definition. Then use the function to print out first n elements of the sequence.

$$F_n = \begin{cases} 1, & n = 0 \; or \; n = 1 \\ F_{n-1} + F_{n-2}, & n > 1 \end{cases}$$

Ex: n = 5

Fibo: 1 2 3 5 8

20. Write program to print out the multiplication tables from 2 to 9.