1. **x** and **n** are input through the keyboard. Write a program to compute $\mathbf{x^n}$, **n!** , $\mathbf{{}^nC_r}$, $\mathbf{{}^nP_r}$
2. Construct the following table. Here **n** is input from the user.

1	2	3	…	n
2	4	6	…	2n
3	6	9	…	3n
.	.	.	…	.
.	.	.	…	.
.	.	.	…	.
n	2n	3n	…	nn

3. Write a program to determine all **prime numbers** within the range **[a …b]** where **a** & **b** are input through the keyboard.
4. Write a program to find the first n **Fibonacci number** where **n** is the input from the user.
5. Write a program to find out the first n **perfect number** where **n** is the input from the user.
6. Write a program to print out all **Armstrong numbers** between 1 and 10000.
7. Write a program to show the following triangle/rectangle of '*'s or numbers. Take **n** as input from the user to determine the number of rows of the structure. (eg: n = 5)

```
        *
       * * *
      * * * * *
     * * * * * * *
    * * * * * * * * *

        *
       *  *
      *     *
     *        *
    * * * * * * * * *

* * * * *
* * * * *
* * * * *
* * * * *
* * * * *

* * * * *
*       *
*       *
*       *
* * * * *
```