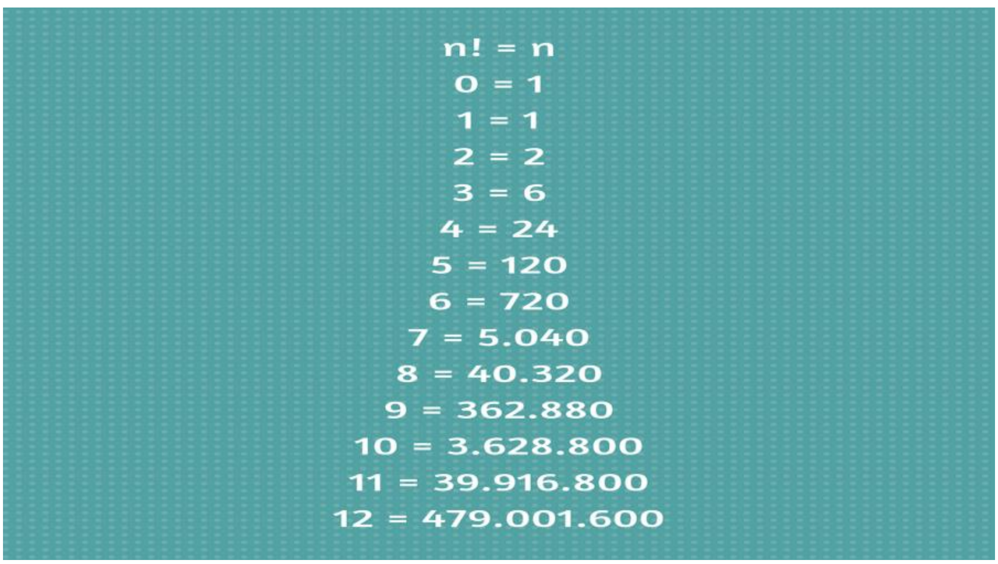
Homework – Task 1

- The factorial function multiplies all who numbers from the chosen number down to 1.
  - Example:
    - 4! = 4 * 3 * 2 * 1 = 24
    - 7! = 7 * 6 * 5 * 4 * 3 * 2 * 1 = 5040
    - 1! = 1
    - 0! = 1 (strangely, but defined to be like this)



- Write a program that does the following
  - Ask for an integer, for example, 6.
  - Calculate the factorial of that number. In this example 6!.
  - After the calculation, print out "Calculation finished!" using else clause.
  - Output the result, like "6! is 720."
  - Check your results with the numbers shown in the picture above.

Task 2

- Print out the following shapes
  - a)

vvvvvvvv
vvvvvvvv
vvvvvvvv
vvvvvvvv
vvvvvvvv

  - b)

&&
&&&&
&&&&&&
&&&&&&&&

  - c)

£@£@£@£@£@£@
£@£@£@£@£@
£@£@£@£@
£@£@£@
£@£@
£@

  - d)

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

Task 3

- We talked about text steganography last week - to hide a message by inserting random characters.

```
import random, string
myMessage = "The passcode is five zero six eight."
newMessage = ""
for l in myMessage:
    newMessage = newMessage + random.choice(string.ascii_letters)
    newMessage = newMessage + random.choice(string.ascii_letters)
    newMessage = newMessage + l
print(newMessage)
```

- Now suppose you forgot the original message, and you only know
  - the jumbled-up message - the value of `newMessage` as above
  - the rule that the message was generated – every third letter matters

- You have to write a program to decode the jumbled up message and get the original message. Can you do that?