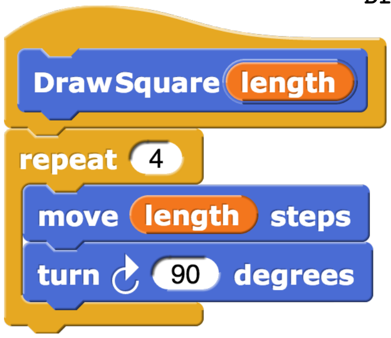
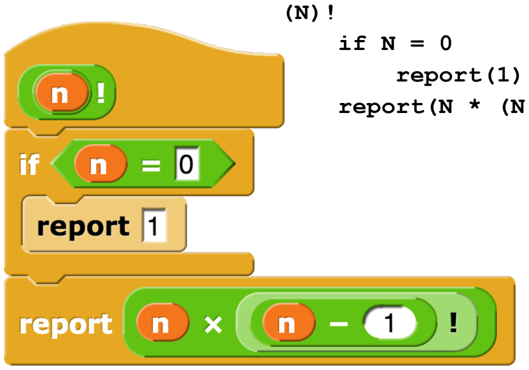
Writing *Snap!* code on paper

You will be asked to write *Snap!* code on this exam, so we've developed a technique for writing it on paper. There are a few key things to notice:

- We often write variables in **`UPPERCASE`**.
- We change spaces between words in block names to dashes (this makes it much easier to read).
- We use indentation just as *Snap!* does, to help us understand what is "inside" the **`if`**, **`else`**, and other Control structures. E.g., here's how you could write the **`DrawSquare`** and **`n!`** blocks:

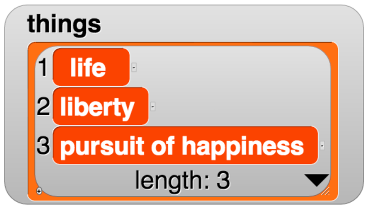


```
Draw-Square(LENGTH)
    repeat(4)
        move(LENGTH)steps
        turn-right(90)degrees
```

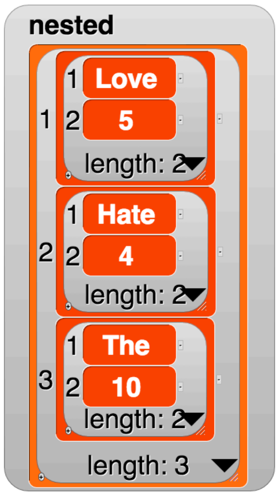


```
(N)!
    if N = 0
        report(1)
    report(N * (N - 1)!)
```

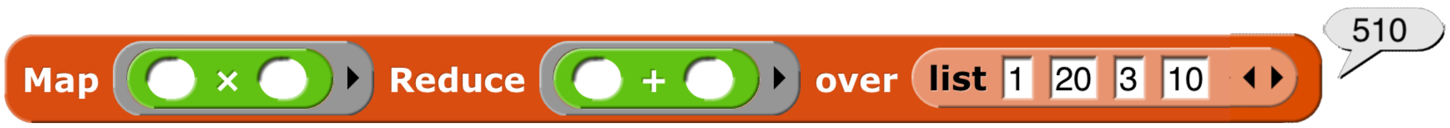
- When you want to write a list of things, write them with an open parenthesis, then the first item, second item, etc (separated by spaces) and when you're done, put a closed parenthesis. If any of your items are a sentence, you have to put quotes around the sentence. So, for example, the following list of three things would be written as the equivalent 3-element-list:
  - **`(life liberty "pursuit of happiness").`**



- Similarly, a nested list just shows up as a nested set of parenthesis. So the following would be written as
  - **`((Love 5) (Hate 4) (The 10)).`**



- If you want to pass in a function as argument, you know the function must be surrounded by a grey-border. Here are three new conventions:
  - The grey border is written as *square brackets*: **`[ ]`**
  - Blanks are written as parenthesis with underscore _ in the middle, but common blocks that are passed in to HOFs can be simplified by just their name (and not the parens and underscores)
  - Return values are written as ➔ **`value`**
- So the following would be written as:
  - **`Map[ (_)*(_) ]Reduce[ (_)+(_) ]over( (1 20 3 10) ) ➔ 510`**
- or, in the more simplified (and preferred) format:
  - **`Map[ * ]Reduce[ + ]over( (1 20 3 10) ) ➔ 510`**


Map
×
Reduce
+
over
list 1 20 3 10
510