

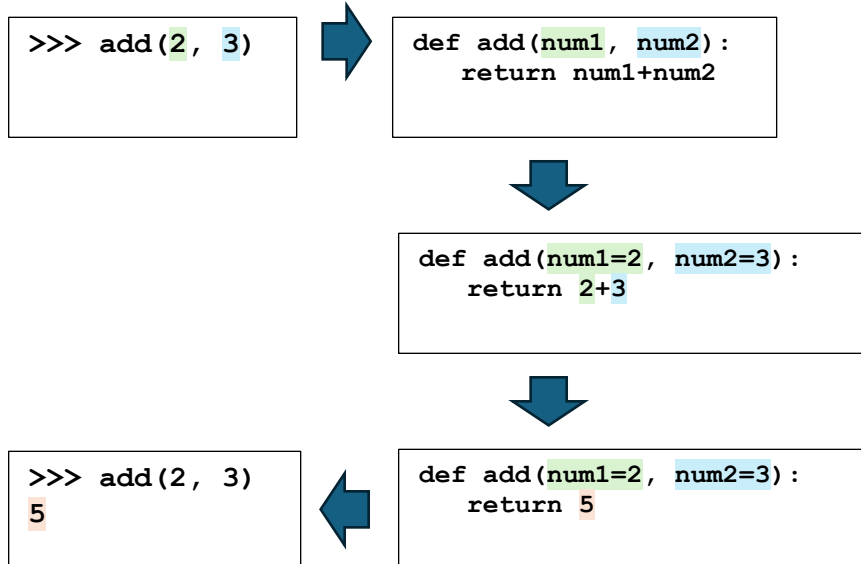
"Functions" allow code reuse. The three functions below simply add, subtract, or multiply two numbers and return the result:

```
>>> def add(num1, num2):  
...     return num1+num2  
...  
>>> add(2, 3)  
5  
>>> add(8, 7)  
15
```

```
>>> def sub(num1, num2):  
...     return num1-num2  
...  
>>> sub(2, 3)  
-1  
>>> sub(8, 7)  
1
```

```
>>> def mul(num1, num2):  
...     return num1*num2  
...  
>>> mul(2, 3)  
6  
>>> mul(8, 7)  
56
```

When you "call" a function, parameter values in the call map to function local variables in the body (such as variables named "num1" and "num2" in the examples above), which are then evaluated, and a return value, if specified, is returned to the caller:



Functions can also define new local variables to hold temporary results, like (this function behaves identically to the "add" function above, but temporarily stores the answer in a new local variable named "answer"):

```
>>> def add(num1, num2):  
...     answer = num1+num2  
...     return answer  
...
```

Challenge:

In mathematics, the **factorial of a non-negative integer n** , denoted as $n!$, is defined as the product of all positive integers from 1 to n . For example, $5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$. The factorial of zero is defined as $0! = 1$.

Create a function to compute and return the factorial of an integer parameter:

```
def fact(num):  
    what goes here?  
    return what?
```

Then call it five times to compute $2!$, $3!$, $5!$, $60!$, and finally $0!$:

```
>>> fact(2)  
2  
>>> fact(3)  
6  
>>> fact(5)  
120  
>>> fact(60)  
8320987112741390144276341183223364380754172606361245952449277696409600000000000000  
>>> fact(0)  
1
```

