

## Activity 4

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### Comp 11 - Summer Session — Fun with functions

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With a partner(or two), discuss the following code sample and answer the questions below. The instructor and teaching assistants will let you discuss and then be around to answer questions. <sup>1</sup>

#### 4.1 Description

Functions are a way to reuse code. The idea is we can write more *modular code* if our program is split into functions (as opposed to writing all of our code in the `int main()` function).

```
1 #include <iostream>
2 // Simple function
3 int square(int x){
4     return x*x;
5 }
6
7 // Sample function with multiple parameters
8 int addFour(int a, int b, int c, int d){
9     return a+b+c+d;
10 }
11
12 int main(){
13
14     squre(5);
15     addFour(1,2,3,4);
16
17     return 0;
18 }
```

Listing 4.1: Function Example

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<sup>1</sup>Activities do not need to be returned to instructors, they are for your benefit.

## 4.2 Questions

3. What is a function with no return type called? (In fact, the term itself is a type—but with no value returned).
2. What are three reasons to use functions in your code?
3. What is it called when I have multiple functions named the same thing, but with different parameters and/or return types?
4. Write a function called 'rightTriangle' that returns a boolean value for the condition:  $a^2+b^2 = c^2$  Note, you will have two 'return' statements.
5. From the previous question, revise the function so that it is templated. That is, I can use any valid data type on the function. `template <class myType>`
6. What happens if I use a `std::string` as my template parameter in the previous question?