

## COP4020 Homework Assignment 7

[usual rules apply: name, usernames, repeat question, pdf only, submit to Blackboard under Assignments – Assignment 7]

1. Using C or C++ and gcc/g++, write a program that discovers the order in which subroutine parameters are evaluated.
2. Textbook exercise 8.12. [ed 2 and 3]
3. Textbook exercise 8.15. [ed 2 and 3]
4. Textbook exercise 8.16 (think about the consequences on strong typing requirements). [ed 2 and 3]
5. Suppose a programming language adopts parameter passing by name. How can you change the code in the swap subroutine so that it swaps the values of two arguments, even when the arguments are **i** and **a[i]**? Is this possible at all without using extra space beyond the temporary local variable?
6. What are the four values printed by the following pseudo-code program assuming parameter passing modes call-by-value, call-by-reference, call-by-value/result, and call-by-name? That is, for each parameter passing mode evaluate the program and show the value that you think will be printed:

```
integer a; // global variable
procedure p(integer x)
begin
  a := 1;
  x := x + 1;
end
begin // main program
  a := 2;
  p(a);
  print(a);
end
```