COP4020 Homework Assignment 6

1. Textbook exercise 3.5 [ed 2] = 3.6 [ed 3] (assuming integer division rounds down, thus x/:=2 with x=9 gives x=4)

2. Textbook exercise 3.9 [ed 2 and 3] (assuming this code occurs in a function or method body, first determine where the variables are stored)

3. Consider the following C++ program fragment:

```cpp
MyClass A;
int main()
{
  MyClass * B = new MyClass;
  B->data_ = A.data_;
  MyClass A;
  A.data_ = B->data_;
  delete B;
}
```

   a. What is the storage allocation (static/stack/dynamic) for the various MyClass objects?
   b. Draw the timeline of the binding lifetimes and object lifetimes for A, B, and MyClass objects.

4. Consider the following C program:

```c
#include <stdio.h>
int main()
{
  int a = 2, x;
  {
    int b = 1;
    printf("b=%d\n", b);
  }
  {
    int c;
    printf("c=%d\n", c);
  }
  printf("x[1]=%d\n", (&x)[1]);
}
```

   a. Compile and run on linprog. What are the values printed? Explain why the value of c is not "random". Explain why x[1] is not "random".
   b. Can you find a non-Linux platform on which the value of x[1] is different? Hint: try MSVC++, GCC or CC on Solaris, GCC on Mac OS X, ...