Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class Day / Time: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Due Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lab Exercise: Arithmetic in C++

What value is stored into the integer variable num after each of the following expressions has been evaluated? **Show each step as the compiler would evaluate it**.

(ROUND EACH FLOAT TO 2 DECIMAL PLACES)

Assume the following declaration:

**int num;**

1. **num = 2.0 / 3.0 + 9.55**;

= .666667 + 9.55

= 10.2167

num (final value stored) = 10

1. **num = 12 - 8 \* 6**;

= 12-48

= -36

num (final value stored) = 36

1. **num = 1.25 \* 5 - 4.0**;

= 6 – 4.0

= 2.0

num (final value stored) = 2

**Write C++ combined operators to perform the following.**

1. Add 22 to n1 (store the result in n1): n1 += 22
2. Multiply n2 + 12 - n3 and n1 (store the result in n1): n1 \*= (n2 + 12 – n3)
3. Find the remainder of n3 divided by 3 + n1 (store the result in n3): n3 %= (3 + n1)
4. Given the following piece of code evaluate the expressions and determine what would be stored in the following variables. **SHOW YOUR WORK** (ie. Show how each value changes.

int main()

{

int a, b, c, d, e, f;

1. a = 2;
2. b = 4;
3. c = 6;
4. d = 8;
5. a \*= c;
6. d += --a \* c++;
7. e = --c \* (a += 6);
8. f = --a + --b \* c++ + --d;

return 0;

}

**a b c d e f .**

**1** 2 \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

**2** \_\_\_\_\_\_\_\_\_ \_4 \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

**3** \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ 6 \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

**4** \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ 8 \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

**5** 12 \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

**6** 11 \_\_\_\_\_\_\_\_\_ 7 74 \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

**7** 17 \_\_\_\_\_\_\_\_\_ 6 \_\_\_\_\_\_\_\_ 102 \_\_\_\_\_\_\_\_\_\_\_

**8** 16 3 7 73 \_\_\_\_\_\_\_\_\_ \_107

=====================================================================

**Final Values:**

16 3 7 73 102 107