Name	Asa Hayes
OS	Windows 7
Compiler	IDE

For this labwork, feel free to write code that calculates the results of the given expressions to verify your calculations by-hand (as your ability to evaluate expressions maybe tested on an exam)

Arithmetic

Expression	Result	Highest precedence operator
`5 + 3 / 2`	6	division
`( 5 + 3 ) / 2`	4	parentheses
`(4 + 8 % 3) / 2`	3	parentheses
`4 + 8 % 3 / 2`	5	modulus

What happens when the expression 8.0 % 3 is entered? Why do you think this is?

8.0 % 3 results in an error, because the two different numbers are in incompatible formats for the modulus operator to work with.

Mixed Mode Arithmetic

Using the code below, determine whether each of the following expressions is valid or invalid. If valid, indicate the result and whether it is an integer or floating point value. It is important that you use the code provided becasuse the object storing the result, exp, will be typed based on the result of the expression evaluated.

The following pseudocode maybe helpful:

```
#include <iostream>
#include <typeinfo>
using namespace std;
int main()
{
    const auto exp = 6.0 / 2;
    cout << endl << "6.0 / 2 = " << exp << " " << typeid(exp).name();
    // d denotes floating point; i denotes integer
}
```

Expression	Valid?	Result	Data type of result
12.0 / 2.0 + 5 * 2	Valid	16	floating point
10 / 2 + 6 / 3	Valid	7	integer
10 / 4 + 6 / 2	Valid	5	integer
10 % 4 + 6 % 3	Valid	2	integer
10.0 / 4	Valid	2.5	floating point
10 / 4.0	Valid	2.5	floating point
6.0 / 2	Valid	3	floating point
10.0 / 4 + 6 / 2	Valid	5.5	floating point
10 / 4 + 6.0 / 2	Valid	5	floating point
(10.0 / 2.0 % 2) / 10	Invalid: opera		
((10.0 / 2.0) % 2) / 10	Invalid: opera		
(10.0 / 2 % 2) / 10	Invalid: opera		
(10 / 2 % 2)	Valid	1	integer
(9 % 2 / 0.5)	Valid	2	floating point

`(10 / 2 % 2) / 10`	Valid	0 integer
`(10 / 2 % 2) / 10.0`	Valid	0.1 floating point

Increment and Decrement Operators

Determine the output of the following expressions (using `cout`), given that `int age = 19` (for each evaluation).

Expression	Result
`cout << age++;`	19
`--age`	18
`age++ + 5`	24
`++age + 5`	25
`age-- + 5`	24
`--age + 5`	23

Assignment

Provided the following assignments, determine the value stored in the object identified by x.

Assignment	Result	Why
`double x = 5.0/2;`	2.5	Floating-point
`double x = 5/2.0;`	2.5	Floating-point
`double x = 5/2;`	2	Integer divisio
`int x = 5/2;`	2	Integer divisio
`int x = 5.0/2;`	2	Narrowing con

		`int x = 5/2.0;`	2	Narrowing con		
	Submission					
	Download your completed assignment as a PDF (File->Download As->PDF Document) and submit to GradeScope for grading.					