CS 1313 010 Fall 2024 Homework #6

Quiz to be held in class 9:30-9:45am Mon Feb 26 2024

Please feel free to discuss these questions with your classmates, but **NOT** to copy each other.
NOTE: Except where and as explicitly permitted in writing (for example, in a Homework),
you are **ABSOLUTELY FORBIDDEN** to **COPY EVEN A SINGLE CHARACTER** from,
or to have **ANY** shared code with, **ANY** other entity,
whether a human being (regardless of whether in CS1313 or not),
a text resource, a computing resource or anything else,
whether in person, on a local computer, online or anywhere else.
It's **INCREDIBLY EASY** for us to detect such copying, so **DON'T EVEN THINK ABOUT IT!**

1. **GIVE TWO EXAMPLES** of unary arithmetic operations (**NOT** operators).
   (a)
   (b)

2. For the two examples of unary arithmetic operations, above, **WHAT ARE THE ASSOCIATED OPERATORS?**
   (a)
   (b)

3. **GIVE TWO EXAMPLES** of binary arithmetic operations (**NOT** operators).
   (a)
   (b)

4. For the two examples of binary arithmetic operations, above, **WHAT ARE THE ASSOCIATED OPERATORS?**
   (a)
   (b)

5. **WHAT IS THE DIFFERENCE** between dividing an `int` by an `int` and dividing a `float` by a `float`? **BE SPECIFIC AND USE THE CORRECT TERMINOLOGY.**

6. **WHAT IS THE DIFFERENCE** between dividing an `int` by a `float` and dividing a `float` by a `float`? **BE SPECIFIC AND USE THE CORRECT TERMINOLOGY.**

7. **WHY** is the use of numeric literal constants in the body (execution section) of a program considered to be bad programming practice?

8. **WHAT IS THE OUTPUT** of each of these programs? Examine the programs **CAREFULLY.** If a program won't compile, mark **WON'T COMPILE** and **EXPLAIN.** If a program compiles and runs but does not produce any output, mark **NO OUTPUT** and **EXPLAIN.** If a program compiles and runs but produces garbage output, mark **GARBAGE** and **EXPLAIN.** If you are not confident of an answer, type in, compile and run the program.

(a)
```
#include <stdio.h>

int main ()
{ /* main */
   int x = 4, y = 6, z;

   x = x + 5;
   z = x * y;
   printf("x = %d, y = %d, z = %d\n", x, y, z);
} /* main */
```

(b)
```
#include <stdio.h>

int main ()
{ /* main */
   int d = 2, e = 4, f;

   e = e * 3;
   f = d + e;
   printf("%d %d %d\n", d, e, f);
} /* main */
```

(c)
```
#include <stdio.h>
int main ()
{ /* main */
   float v = 2.0, w;
   int p = 6, q = 3, r, s;

   r = p / q;
   s = q / p;
   w = p / (v * q);
   printf("p = %d, q = %d, r = %d, s = %d\n", p, q, r, s);
   printf("v = %f, w = %f\n", v, w);
} /* main */
```

9. A C program has the following declarations:

```
float x = 5.0, y = 10.5, z = 1.25;
int   i = 3, j = 6, k = 8, m;
```

EVALUATE each of the following expressions. **SHOW YOUR WORK,** including the data type of each subexpression (indicating a `float` with a decimal point). If the expression would compile and run but would produce garbage output, mark **GARBAGE** and **EXPLAIN.** If you are not confident of your answer, type in, compile and run an appropriate program.

(a) `y / x`

(b) `i % j`

(c) `k - z`

(d) `80 / i - x`

(e) `250 / m - 18`

(f) `i % (j - 4) % 3`

If you use **ANY** resources other than Dr. Neeman, the TAs (Basiri, Carden Dodda), the course textbook or the materials posted on the course webpage, you **MUST** reference them on the quiz. **THIS INCLUDES CLASSMATES, FRIENDS, PROFESSORS, ONLINE RESOURCES, ETC.**