1. (2 points) What is the difference between a variable and a constant (i.e.,
macro)?

The value of a variable can be changed during the running time, but the value
of a constant cannot be changed during the running time.

2. (2 points) Same variable can be used in a computation as well as storing the
result of the computation in one statement, for example:

```c
x = 2;
printf("%d\n", x);
x = x + 1;
printf("%d\n", x);
```

Give the values of the above `printf()` statements.

2
3

Explain the order in which the computation and the assignment will work in
the `x = x + 1;` statement.

Computation is done first and then the result of this computation is stored by
the assignment statement. Variable x is participating in the computation and
the result stored back in x. Previous value of x is gone.

3. (2 points)
Give the values printed by the last statement. Is there any problem? Explain.

```c
int x,y,z;
x = 2 * 3 + 4 * 5;
y = x + 3;
z = x + y + z;
printf("%d %d %d\n", x, y, z);
```

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z is not initialized or assigned a value before it is used in a computation
statement.

4. (5 points) Write the outputs of the following `printf()` functions. Or if there
is any problem with it, explain it.
   a) int x = 11;

      `printf("5 + 6 is equal to:%d\n", x);`

   b) float x = -1.5;
printf("the real value of x is:%d\n", x);

c) float x = 11;
    float y = -11;
    printf("%f + %f = %f \n", x, y, x+y);

d) int x = 11;
    float y = -11;
    printf("%d + %f = %f \n", x, y, x+y);

e) float x = 11;
    float y = -11;
    printf("%d + %f = %d \n", x, y, x+y);

a) 5 + 6 is equal to 11
b) x is float and in printf() we should have used %f instead of %d
c) 11.000 + -11.000 = 0.000 ( 11 + -11 = 0 is also acceptable to us)
d) 11 + -11.000 = 0.000 ( 11 + -11 = 0 is also acceptable to us)
e) x+y is float and in printf() we should have had %f instead of %d