Assignment 1

Due: 7/17 before end of class

Problem 1 (Paper-based) (3 pts)

Write down the value of a in each steps of following expression.

eg: int a =0; value of a : 0

a=a+1; 1

a=a/2; 0

(1) int a = 3/2;

(2) int a = 4%3;

int b =5;

a=b;

(3) int b = 4;

double a=b;//be careful about written style(decimal)

(4) double b=2.3;

int a =b+2;

(5) int a = 5;

a+=4;

a-=0;

a*=2;

a/=3;

a%=6;

a++;

a--;

a=a+2.0;

Problem 2 (Paper-based) (3 pts)

(1) Convert following binary (decimal) numbers to decimal (binary) numbers

$(\mathbf{10011011})_2$, $(\mathbf{1001})_2, (\mathbf{12345})_{10}, (\mathbf{1000101})_{10}$

(2) Prove the following logical expressions (Tips: use the formulas mentioned today)

$$\boldsymbol{BC + A\,\overline{(AC)} + B(\overline{C} + 1) + A\overline{C} = B + A\overline{C}}$$

$$\boldsymbol{(A\overline{B}C) + (AB\overline{C}) + (ABC) = A(B + C)}$$

$$\boldsymbol{(A + BC)(\overline{B} + C)(A + \overline{B}) = AC + A\overline{B}}$$

Problem 3 (programming) (4pts)

(1) Write a program let user type 3 number, and the output is small to big order divided by comma. Example:

Input: 3 6 2

output:2,3,6

input: 3 5 3

output: 3,3,5

(2) Write a program to convert a word to a number (just finish 0,1,2), if the input is wrong, print out: not a number I know.

eg:

input: zero

output: the number is 0

input: abc

output: not a number I know