CSCI 1300 Recitation HW5

Question 1:

```
#include <iostream>
using namespace std;

int main() {

int num = 1;

while(num <= 10) {
    cout << num << " ";
    num = num + 1;     // removed the int before num
}

return 0;
}
```

Question 2:

```
#include <iostream>
using namespace std;

int main() {

int even = 2;

while (even <= 9) { //changed != to <=
    cout << even << " ";
    even += 2;
}

return 0;
}
```

Question 3:
the psudocode outputs 3, -3, 6, -6, 9.

Question 4:

4.a:

```
define function applyDeductions
pass in income
pass in number of dependants
if income is less than 14600:
return 0;
else:
if number of dependants is greater than zero
return income - 14600 - 500
else
return income -14600
end

define function calculateTax
pass in income
if income <= 10000:
return income * 0.9
else if income <= 50000:
return income * 0.85
else:
return income * 0.8
end

define function computeNetIncome
pass in gross income, number of dependants
declare double variable money
set money to calculateTac(applyDeductions(income, number of dependants))
if number of dependants is greater than zero:
return money + 14600 + 500
else:
return money + 14600
end
```

4.b:

example input 1: income: $100,000, dependants: 2, output: $83,020
example input 2: income: $10,000, dependants: 0, output: $10,000

4.c:

```
assert(computeNetIncome(100000, 2) == 83020)
assert(computeNetIncome(10000, 0) == 10000)
```

4.d:

```
#include <iostream>
#include <cassert>

using namespace std;
```

```
double applyDeductions(double income, int numDependents) {
    if(income < 14600){
        return 0;
    }else{
        if(numDependents >=0){
            return income - 14600 -500;
        }else{
            return income -14600;
        }
    }
}

double calculateTax(double taxableIncome) {
    if(taxableIncome <= 10000){
        return taxableIncome * 0.9;
    } else if (taxableIncome <= 50000){
        return taxableIncome * 0.85;
    } else{
        return taxableIncome * 0.8;
    }
}

double computeNetIncome(double grossIncome, int numDependents) {
    double money = calculateTax(applyDeductions(grossIncome, numDependents));
    if (money == 0){
        return grossIncome;
    }else{
        if(numDependents > 0){
            return money + 14600 +500;
        }else{
            return money + 14600;
        }
    }
}

int main(){
    assert(computeNetIncome(100000, 2) == 83020);
    assert(computeNetIncome(10000, 0) == 10000);
}
```