## CIS1068, Program Design and Abstraction

**Name(print)**_____ **Student Number**_____

a. Write a program to print out the result of 1+2+3+4+5+...+10.

```
int total = 0;
int c = 0;
while(c<10)
{
total = ___total + c + 1_____________________;
c = c +1;
}
System.out.println(total);
```

```
int total = 0;
int c = 1;
while(___c <= 10_____________________)
{
total = total + c ;
c = c +1;
}
System.out.println(total);
```

```
int total = 1;
int c = 1;
while(c<10)
{
total = ___total + c + 1_____________________ ;
c = c +1;
}
System.out.println(total);
```

```
int total = 1;
int c = 0;
while(____c <= 8_____________________)
{
total = total + c+2;
c = c +1;
}
System.out.println(total);
```

b. Write a loop to print out the first 10 prime numbers larger than 1000. A number is "prime" if its only factors are 1 and itself. A "factor" is a number that divides another number evenly.

```
int n = ___1001_________________;

for (int i = 0; i < ___10_______; __n++_________){

   int f =___2________; //f cannot be 1!

   for(_____________; f<n&&n%f!=0 ;___ f++_________);

   if(___f >= n_____________){
     System.out.println(n);
     i++;
   }
}
```

c. Write a program to print out the next perfect number after 6. A number is "perfect" if it is equal to the sum of all of its factors (not including itself as a factor, but including 1 as a factor). 6 is the first perfect number, because its factors are 1, 2, and 3, and 1+2+3 = 6.

```
int n, total, factor;

for(__n=6,total=1_____;total!=n++;_____________________________){

             total =___1__;
// alternatively, total=0 and factor=1

             for(__factor = 2_____; factor < n; factor ++)
             if(n%factor == 0)

             ___total += factor_____________________________;
}
System.out.println("Next perfect number is "+__(n-1)_____);
```

, not ;