

CMSC 113: Computer Science I while Exercises

For each problem below, write what the program would print to the window. You may find it useful to use a table to track the values of the variables in the programs.

```
1. public class Counter
   {
       public static void main(String[] args)
       {
           int count = 0;
           while(count < 5)
           {
               count = count + 1;
               System.out.println(count);
           }
       }
   }
```

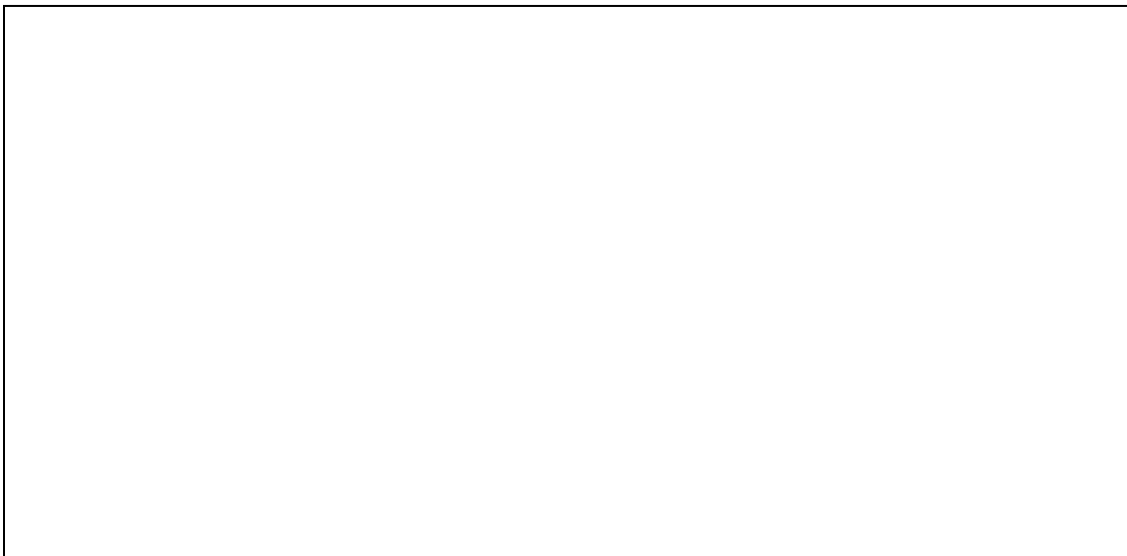
count

--

```
2. public class ThatsOdd
{
    public static void main(String[] args)
    {
        int a = 255;

        while(a > 0)
        {
            System.out.println(a);
            a = a / 2;
        }
    }
}
```

a



```

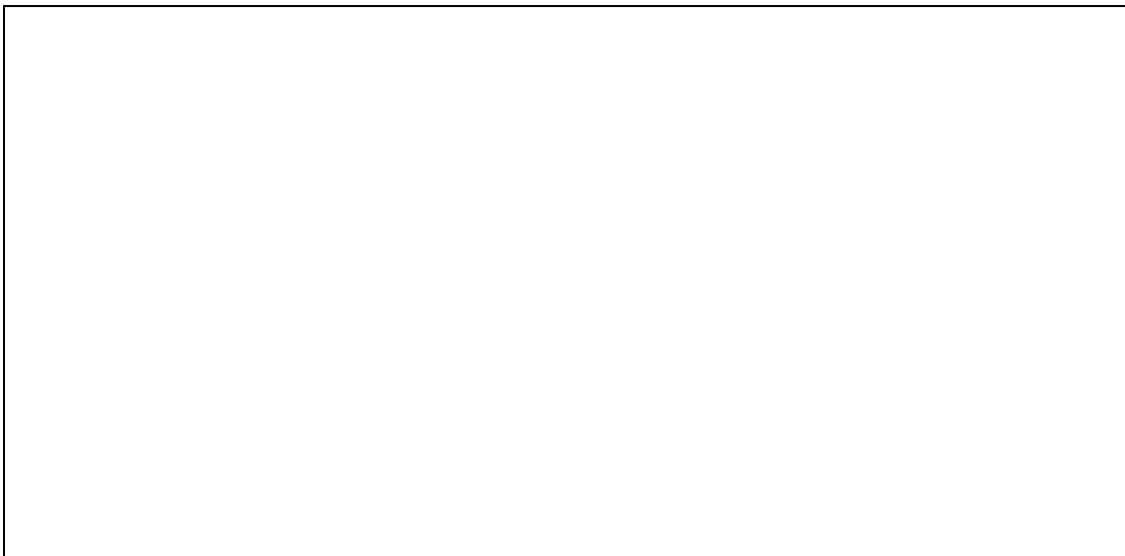
3. public class BackAndForth
   {
       public static void main(String[] args)
       {
           int a = 0;
           int b = 8;

           while(b > 0)
           {
               if(a < 4)
               {
                   a = a + b;
               }
               else
               {
                   a = a - b;
               }
               b = b - 1;

               System.out.println(a);
           }
       }
   }

```

a	b



4. public class LoopLoop

```
{
    public static void main(String[] args)
    {
        int x = 0;
        int y = 0;

        while(y < 3)
        {
            x = 0;
            while(x < 3)
            {
                System.out.println(x + ", " + y);
                x = x + 1;
            }
            y = y + 1;
        }
    }
}
```

x	y

5. Write a method (in Eclipse) that detects perfect numbers. A *perfect number* is the sum of its divisors.
6. Write a method (in Eclipse) that sums the digits of a number. Note that $n \% 10$ is the last digit of n and $n / 10$ is just like n , but without its last digit.