29.

import java.io.\*;

import java.util.\*;

public class SumNaturalNumbers\_29 {

    public static void main(String[] *args*) throws IOException {

        Scanner sc = *new* Scanner(*new* File("input.txt"));

        int highest = Integer.MIN\_VALUE;

*while* (sc.hasNext()) {

            int num = sc.nextInt();

*if* (num > highest) {

                highest = num;

            }

        }

        sc.close();

        int sum = highest \* (highest + 1) / 2;

         PrintWriter writer = *new* PrintWriter(*new* FileWriter("output.txt", true));

        writer.print(sum+",");

        writer.close();

    }

}

30.

import java.util.Scanner;

*public* *class* DivisionRemainder\_30 {

*public* *static* void main(String[] *args*) {

        Scanner scanner = *new* Scanner(System.in);

        System.out.print("Enter the size of array1 (greater than 20): ");

        int n = scanner.nextInt();

*if* (n <= 20) {

            System.out.println("The size of array1 should be greater than 20.");

*return*;

        }

        int[] array1 = *new* int[n];

        System.out.println("Enter " + n + " elements for array1:");

*for* (int i = 0; i < n; i++) {

            array1[i] = scanner.nextInt();

        }

        int m = (int) Math.ceil((double) n / 10);

        int[] array2 = *new* int[m];

        System.out.println("Enter " + m + " elements for array2:");

*for* (int i = 0; i < m; i++) {

            array2[i] = scanner.nextInt();

        }

        System.out.println("Array1: ");

*for* (int i *:* array1) {

            System.out.print(i + " ");

        }

        System.out.println();

        System.out.println("Array2: ");

*for* (int i *:* array2) {

            System.out.print(i + " ");

        }

        System.out.println();

*for* (int i = 0; i < array1.length; i++) {

*for*(int j=0;j < array2.length; j++)

            {

            int quotient = array1[i] / array2[j];

            int remainder = array1[i] % array2[j];

            System.out.println("Element " + array1[i] + " divided by " + array2[j] +

                    " gives: Quotient (Ceil) = " + quotient + ", Remainder = " + remainder);

            }

        }

        scanner.close();

    }

}

31.

import java.text.SimpleDateFormat;

import java.util.Date;

public class CurrentDateTime\_31 {

    public static void main(String[] *args*) {

        SimpleDateFormat sdf = *new* SimpleDateFormat("yyyy-MM-dd HH:mm:ss");

        Date now = *new* Date();

        System.out.println("Current date and time: " + sdf.format(now));

    }

}

32.

public class CounterClass\_32 {

    private static int instanceCount = 0;

    public CounterClass\_32() {

        instanceCount++;

*if* (instanceCount > 50) {

            instanceCount = 0;

            System.out.println("Object count exceeded 50, resetting to 0.");

        }

    }

    public static int getInstanceCount() {

*return* instanceCount;

    }

    public static void main(String[] *args*) {

*for* (int i = 0; i < 100; i++) {

*new* CounterClass\_32();

            System.out.println("Instance count: " + CounterClass\_32.getInstanceCount());

        }

    }

}