

```
import java.util.*;

public class boxes {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter number of boxes (N): ");
        int n = sc.nextInt();

        if (n < 1 || n > 1000) {
            System.out.println("INVALID INPUT");
            return;
        }

        int cartonSizes[] = { 48, 24, 12, 6 };

        int total = 0;
        int t = n;
        for (int i = 0; i < cartonSizes.length; i++) {
            int cartonCount = t / cartonSizes[i];
            t = t % cartonSizes[i];
            total += cartonCount;
            if (cartonCount != 0) {
                System.out.println(cartonSizes[i] + " * " + cartonCount +
                    " = " + (cartonSizes[i] * cartonCount));
            }
        }

        if (t != 0) {
            System.out.println("Remaining boxes: " + t
                + " * 1 = " + t);
            total++;
        } else {
            System.out.println("Remaining boxes: 0");
        }

        System.out.println("Total number of boxes: " + n);
        System.out.println("Total number of cartons: " + total);
    }
}
```