

16. 11417 - GCD

Time limit: 2.000 seconds

Given the value of N, you will have to find the value of G. The definition of G is given below:

$$G = \sum_{i=1}^{i < N} \sum_{j=i+1}^{j \leq N} \text{GCD}(i, j)$$

Here GCD(i,j) means the greatest common divisor of integer i and integer j.

For those who have trouble understanding summation notation, the meaning of G is given in the following code:

```
G=0;

for (i=1; i<N; i++)

for (j=i+1; j<=N; j++)

{

    G+=GCD(i, j);

}

/*Here GCD() is a function that finds the greatest
common divisor of the two input numbers*/
```

Input

The input file contains at most 100 lines of inputs. Each line contains an integer N (1<N<501). The meaning of N is given in the problem statement. Input is terminated by a line containing a single zero. This zero should not be processed.

Output

For each line of input produce one line of output. This line contains the value of G for corresponding N.

Sample Input**Output for Sample Input**

10	67
100	13015
500	442011
0	