

Shashank And The Help

Shubhanshu was given a number x and y . He found out the algorithm to find the number of relative prime of a number. Relative prime number of number x is the number from 1 to $x-1$, which is relative prime to x .

Pseudocode:

```
relative_prime(a):  
    i=1  
    ans=0  
    while(i<a):  
        if(gcd(i,a)==1):  
            ans+=1  
        i+=1  
  
return ans
```

The function **gcd(x,y)** finds the greatest common divisor of number x and y .

Using this pseudocode he found out the number of relative prime of all number between x and y .

But now he get bored and wants you to find the sum of output in the above pseudocode, that is

relative_prime(x)+relative_prime(x+1)+.....+relative_prime(y)

Input:

The first line of the input contains test case t . then the next t lines contains x and y .

$1 \leq t \leq 1000$

$2 \leq x, y \leq 100000$

Output:

Output the sum of relative primes from x to y . (x and y included)

Input:

1

3 5

Output:

8

Explanation:

In first case, 3 has 2 relative prime number 1 and 2. So 3 has 2 relative prime number. 4 also has two relative prime number that is 1 and 3. Similarly 5 has four relative prime number 1, 2, 3 and 4.

Therefore You should output the sum of number of relative prime number of 3, 4 and 5.

3= 2 relative prime number

4= 2 relative prime number

5= 4 relative prime number

Output: $2+2+4=8$.