Summation is important and basic operations in many applications. When doing the summation, we usually needs to skip values which satisfy some conditions. A common condition is $ax \leq b$, where a and b are two integer values. Write a program to sum all the integers within the range $x \in [LB, UB]$ satisfying the condition $ax \leq b$.

Input

The input contains several cases and ends with a star '*' sign. Each case contains four integer values, which in turn represent LB, UB, a and b.

Output

For each case, output summation of all the integers within the range $x \in [LB, UB]$ satisfying the condition $ax \leq b$.

Sample Input

1 10 2 8
-5 5 3 6
*

Sample Output

10
-12