All submissions for this problem are available.

Mikahs is fond of mathematics and his favourite topic is **Sets**. He boasts of his knowledge in this topic and Ramu the mathematician is jealous of Mikahs. To take him down, Ramu prepares a tough challenge for Mikahs. He first describes a new quantity for numbers discovered by him. For a number **X**, the product of prime divisors of **X** is defined as the **Niceness** value of **X** by Ramu.  
  
For Eg. **X = 36**, **36 = 22 \* 32** therefore **Niceness** value of **36** is **2\*3 = 6**.  
  
  
  
Now comes his question, an array of size **N** is given, and **3** integers **K**, **A** and **B**are given. Mikahs is asked to find the **number of subsets** of size **atmost K** whose **Niceness** value is in the range **[A, B]**, where **Niceness** value of a subset is equal to the **sum of Niceness values of its elements**.   
  
  
**NOTE:** Two subsets are different when they contain at least one pair of elements **A[i]** (in first subset), **A[j]** (in second subset) where **i != j**. For eg. For array **{2, 3, 2, 4}**, subsets **{A[0], A[1]}** and **{A[1], A[2]}** are different.

**Input**

First line of the input contains **N**, **K**, **A**, **B** which are length of array, maximum size of subset required, and the lower and upper bound of the range respectively.  
  
Second line contains **N** space separated integers, the array elements.

**Output**

Print the **number of subsets** of size **at most K** whose **Niceness** value is in the range **[A, B]**.

**Constraints**

* **1 ≤ N ≤ 32**
* **1 ≤ K ≤ N**
* **2 ≤ A < B ≤ 108**
* Array elements are in the range **[2, 106]**

**Example**

**Input:**

4 2 3 6

5 2 3 4

**Output:**

5

**Explanation**

The **5** subsets are :   
  
**{5}** - Niceness value 5  
  
**{3}** - Niceness value 3  
  
**{2, 3}** - Niceness value 2 + 3 = 5  
  
**{2, 4}** - Niceness value 2 + 2 = 4  
  
**{3, 4}** - Niceness value 3 + 2 = 5  
  
Thus all subsets are of size atmost **2** and their niceness values are in the range **[3, 6]**.

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