

DMOPC '15 Contest 3 P5 - Total Annihilation

quantum works part-time at CERN as a particle physicist, where he spends his days smashing particles together in the famous [Large Hadron Collider](#). He has recently managed to isolate some samples of antimatter in the LHC and would like to ~~play~~ experiment with them. (**Warning: do not try this at home.**)

Everyone knows that when matter and antimatter collide, they disappear and release massive amounts of energy in a reaction known as annihilation. If the particles and antiparticles are present in equal amounts, all of them will disappear in the reaction. **quantum** calls this a **total annihilation**. Note that reacting 0 particles with 0 antiparticles does not count.

quantum has N samples of matter and M samples of antimatter, the i -th sample of matter has A_i particles ($1 \leq i \leq N$), and the j -th sample of antimatter has B_j antiparticles ($1 \leq j \leq M$). Handling particles is a serious *matter*, so **quantum** will not separate any of the particles from a sample. More formally, this means that **he can only react a non-empty subset of matter samples with a non-empty subset of antimatter samples**.

For ~~fun~~ science, **quantum** would like you to find out the number of different total annihilation reactions that he can produce with these samples. A reaction is different from another if at least one of the samples used in it is not used in the other.

Constraints

For all test cases, $N, M \geq 1$.

Subtask 1 [20%]

$$N, M \leq 10$$

$$1 \leq A_i, B_j \leq 100$$

Subtask 2 [80%]

$$N + M \leq 36$$

$$1 \leq A_i, B_j \leq 10^9$$

Input Specification

The first line of input will contain N and M , separated by a space.

The second line will contain N space-separated integers, $A_1 \dots A_N$, indicating the number of particles in each matter sample.

The third line will contain M space-separated integers, $B_1 \dots B_M$, indicating the number of antiparticles in each antimatter sample.

Output Specification

One integer, the number of different total annihilation reactions that **quantum** can produce.

Sample Input

```
2 3
1 3
4 4 3
```

Sample Output

```
3
```

Explanation for Sample Output

quantum has 4 particles of matter in total from the two samples, which he can use to react with either the first or second sample of antimatter. He can also create a reaction involving the second sample of matter and the third sample of antimatter.