

Momo's Russian Dolls

問題描述：

Princess Momo got to Lala's home finally! Momo brings two sets of Russian dolls as gift to Lala. We call it A set and B set separately. In each set, there are N Russian dolls with different size! Momo puts the Russian dolls on the floor, and the size of each Russian dolls from left to right are $A[1], A[2], \dots, A[N]$. B set is similar, the size of each Russian dolls from left to right are $B[1], B[2], \dots, B[N]$.

Momo wants to play Russian dolls with her another sister, Nana. But Nana isn't smarter than Momo, so they will play the Russian dolls as following:

1. When Momo pick up A_i doll as the outermost doll, Nana will also pick up B_i doll as the outermost doll.
2. When Momo pick A_i doll and put it into A_j doll, Nana will also pick B_i doll and put it into B_j doll. Then the layer of A_i would become 1+layer of A_j . Initially, all dolls are layer 1. We can do this when size of A_i is smaller than size A_j and, size of B_i is smaller than size of B_j .
3. When Momo throws A_i doll into garbage can, Nana will also throws B_i doll into garbage can. They can discard at most K 1-layer dolls in each set. (Totally $2*K$ dolls)
4. No matter how big of a Russian doll A_i is, it can only accommodate one Russian doll A_j . But we can put another smaller doll A_k into A_j .

With the above information, can Momo and Nana complete two Russian dolls with layer at least $N-K$?

For example 1: A set is $\{9,3,7,1\}$ and B set is $\{1,4,8,2\}$ and $K=1$. At first, Momo will discard A_1 (size 9) and Nana will also discard the same position B_1 (size 1). Second, Momo pick up A_3 as outermost dolls, so Nana will also pick up B_3 as outermost dolls. Third, Momo put A_4 into A_2 , get a 2-layer doll(size 3), Nana will also put B_4 into B_2 and get a 2-layer doll(size 4). Finally, Momo put the 2-layer doll into A_3 and get a 3-layer doll. Nana will also do the same and get a 3-layer doll. In the end, Momo and Nana both get a 3-layer doll, so it is successful.

For example 2: A set is $\{1,3\}$ and B set is $\{3,1\}$ and $K = 0$. Momo can put A_1 into A_2 to get a 2-layer doll. But Nana can't put B_1 into B_2 because of the size. So it is regretful.

輸入說明:

Input begins with an integer $T(1 \leq T \leq 20)$, the number of test case. Each test case would be in the following format.

Line 1 : $N\ K$, N is the number of Russian dolls and K is the maximum number of Russian doll we can throw in one set.

($1 \leq N \leq 1000$, $0 \leq K \leq 20$, $K < N$)

Line 2 : $A[1]\ A[2]\ \dots\ A[N]$, the A set of Russian dolls.

Line 3 : $B[1]\ B[2]\ \dots\ B[N]$, the B set of Russian dolls.

$1 \leq A[i], B[i] \leq 3000$.

輸出說明:

Each test case outputs one line. Output “yes” if Momo and Lala can get two Russian dolls with at least $N-K$ layers, “no” otherwise.

範例:

Sample Input:	Sample Output:
2 4 2 9 3 7 1 1 4 8 2 2 0 1 3 3 1	yes no