```c
#include<stdio.h>

int checkLen(int repeatedKey[], int len, int n){
    for(int i = 0; i < n; i++)
        if(repeatedKey[i] != repeatedKey[i % (len)])
            return 0; // Even one mismatch means this isnt correct key

    return 1; // Everything works well
}

int main(){
    int n, i;
    scanf("%d", &n);

    int plain[n], encrypt[n];
    // Input
    for(i = 0; i < n; i++){
        scanf("%d", plain + i);
    }

    for(i = 0; i < n; i++){
        scanf("%d", encrypt + i);
    }

    // Generating the repeated Key.
    int repeatedKey[n];
    for(i = 0; i < n; i++)
        repeatedKey[i] = encrypt[i] - plain[i];

    // Checking the length of the key for all the lengths
    int keyLen = 0;
    for(i = 1; i <= n; i++){
        if(checkLen(repeatedKey, i, n)){
            keyLen = i;
            break; // Need the shortest key
        }
    }

    printf("%d\n", keyLen);
    for(i = 0; i < keyLen; i++){
        printf("%d", repeatedKey[i]);
        if(i < keyLen - 1)
            printf(" "); // No trailing spaces
    }

    return 0;
}
```