1. Write a program that reads in a permutation of the integers 0 to n-1 and prints the inverse permutation. (If the permutation is in an array a, its inverse is the array b such that a[b[i]] = b[a[i]] = i.) Be sure to check that the input is a valid permutation.

a = {2, 0, 4, 3, 5, 1} b = {1, 5, 0, 3, 2, 4}

0 1 2 3 4 5 0 1 2 3 4 5

2. Write a program that reads in an integer n and creates an n-by-n boolean array a such that a[i][j] is true if i and j are relatively prime (have no common factors), and false otherwise.

3. Write a program to transpose a square two-dimensional array in place without creating a second array.