In class, we saw that $\binom{n}{r}$ counts the number of ways that you can arrange n objects, if the objects are one of two types, there are r objects of type 1, $n - r$ objects of type 2, and objects of the same type are indistinguishable.

We also saw that $\binom{n}{r}$ counts the number of ways that you can choose r objects from a group of n objects.

Explain why these numbers are the same by exhibiting a bijection (a one-to-one correspondence) between ways of choosing r objects from n and ways of arranging n objects which occur in two types as described above.