**Ex 1** Assume that the relation "friend" is symmetric. Show that if $n \geq 2$, then in any group of n people there are two with the same number of friends in the group.

**Ex 2** Each of 15 red balls and 15 green balls is marked with an integer between 1 and 100 inclusive; no integer appears on more than one ball. The value of a pair of balls is the sum of the numbers on the balls. Show there are at least two pairs, consisting of one red and one green ball, with the same value. Show that this is not necessarily true if there are 13 balls of each color.