

## 1-sample Median Test

Say you've collected data from 20 participants, and hypothesize that the median is 35. Another way to express this is that you expect  $\frac{1}{2}$  of the participants to have scores above 35 and  $\frac{1}{2}$  of the participants to have scores less than 35.

Stated this way, the question is easily answered using a  $X^2$  gof test with 2 groups and a  $H_0$ : of equidistribution or equiprobability.

**First** you recode the data into two groups: 1) those with scores less than 35 and those with scores greater than 35. Anybody with a score of exactly 35 would be deleted from the analysis.

**Second**, you perform a  $X^2$  gof test on the resulting binary data, testing the  $H_0$ : that  $\frac{1}{2}$  of the participants are in each group.

### Results

- If  $p < .05$ , then the distribution is significantly different from equidistribution, and the median is significantly different from 35.
- If  $p > .05$ , then the distribution is not different from equidistribution and the median is not significantly different from 35.