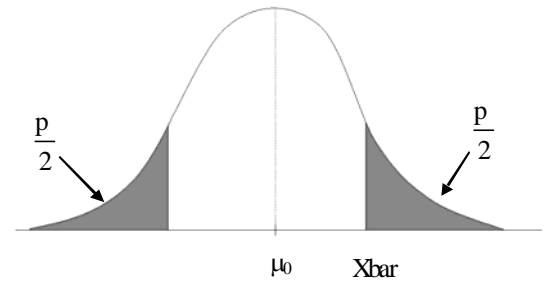


How to calculate a p value:

P-value -- the probability that you'd get a sample value this far from the mean or further **IF** the null hypothesis were true.

- a continuous measure of “strength” of evidence for null hypothesis
- larger p value means more support for H_0
- 1-sided p values give value for one end of the distribution; 2 sided includes both.
- Will reject H_0 in classical hypothesis test if $p < \alpha$

The p value is the area in the tails beyond \bar{X} :
How likely would you be to get an \bar{X} farther than this?



To get p value:

1) Calculate Z test statistic
For example: **Z = -1.75**

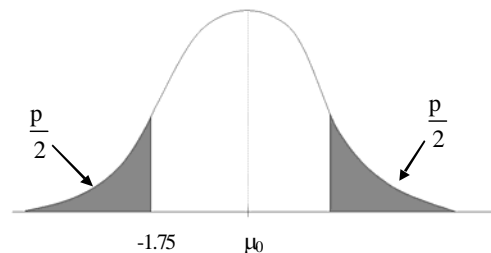
2) Get area under normal curve beyond Z

Look up 1.75 in Normal table to
get area between 0 and 1.75
 $\Pr(0 < Z < 1.75) = .46$

$$\Pr(Z < -1.75) = 5 - .46 = .04$$

3) Double that probability for two-tailed p value

$$p = 2 * .04 = .08$$



So if the null hypothesis about the population were true, 8 percent of the time you would get a sample mean this far or farther from the population mean.