We collected data from students about which name (Bob or Tim) they attached to one of a pair of faces. The researchers who conducted this study on facial prototyping conjectured that more than half of all people would attach the name Tim to the face on the left.

The hypotheses to be tested can be written as $H_0: \pi = .5$ vs. $H_a: \pi > .5$.

1. Describe what the symbol $\pi$ represents in these hypotheses.

It turned out that 45 students attached the name Tim to the face on the left, and 17 attached the name Bob to the face on the left.

2. What proportion of these 62 students attached the name Tim to the face on the left? What symbol do we use for this value?

3. Calculate the value of the appropriate test statistic.

4. Based on the test statistic, is the p-value less than .025? Explain how you know, without using a normal probability table or software.

5. Summarize your conclusion about whether our sample data provide strong evidence (at the .025 significance level) in support of the researchers’ conjecture.