Steps for Hypothesis Testing – Binomial Test

1. Define your symbols. Say explicitly what p, n, and x represent
2. State the claim being tested in symbols. For Binomial Tests, this will have one of the forms in the table from number 4.
3. State the opposite of the claim. Opposites are listed in the table in number 4.
4. Determine H_0 and H_1. Each of these is either the claim or its opposite. H_0 contains equality. H_1 does not.

H_0	H_1
$p \leq a$	$p > a$
$p = a$	$p \neq a$
$p \geq a$	$p < a$

5. Note whether H_0 or H_1 is the same as the claim.
6. Select a significance level α. If α is not given, use $\alpha = 0.05$.
7. Use technology to find the P-value. P is the probability of seeing data as extreme as the observations if H_0 is true. This is a measure of consistency between H_0 and the observations.
8. Decide if you should reject H_0.
   (a) If $P < \alpha$, then the observations are not consistent with H_0.
   REJECT H_0 (support H_1).
   (b) If $P > \alpha$, the observations are consistent with H_0.
   FAIL TO REJECT H_0 (do not support H_1).
9. Restate your conclusion in non-technical terms that refer directly to the claim being tested. Determine if your claim is the same as (or overlaps) H_0 or H_1. If your claim is H_0, your conclusion will be one of these
   - There is enough sample evidence to reject the claim.
   - There is NOT enough sample evidence to reject the claim.

   If your claim is H_1, then your conclusion will be one of these
   - There is enough sample evidence to support the claim.
   - There is NOT enough sample evidence to support the claim.