

Hypothesis Testing Steps for Large One-Sample Problems

Step 1 (Words)

Ho: The population (mean/proportion) of _____ is equal to _____.

Ha: The population (mean/proportion) of _____
is (less than /greater than/ not equal to) _____.

Step 2 (Symbols)

Ho: $\mu = \mu_0$ or $p = p_0$

Ha: $\mu < \mu_0$ or $p < p_0$
 $\mu > \mu_0$ $p > p_0$
 $\mu \neq \mu_0$ $p \neq p_0$

Step 3 (Test statistic and assumptions) Calculate z^* using appropriate formula for mean or proportion.

Step 4 (p-value)

a. Use a z-table.

If Ha: $\mu < \mu_0$ or $p < p_0$, then the p-value = $P(Z < z^*)$
 $\mu > \mu_0$ $p > p_0$, then the p-value = $P(Z > z^*)$
 $\mu \neq \mu_0$ $p \neq p_0$, then the p-value = $2P(Z > |z^*|)$

b. There is a ____% chance that the sample (mean/proportion) of _____ is _____ if the true population (mean/proportion) is _____.

Step 5 (Statistical decision in symbols)

- a. State $\alpha =$ ____.
- b. If ____ $<$ α , reject Ho.
If ____ $>$ α , do not reject Ho.

Step 6 (Statistical decision in a statement)

There is (not) sufficient sample evidence to show _____ (rewrite Ha).