INFERENCE PROCEDURES

I. Confidence Interval

estimate ± margin of error

II. Test of Significance

A. State Hypotheses

1. Right-sided test

H_0 : parameter $\leq$ parameter$_0$

H_a : parameter > parameter$_0$

2. Left-sided test

H_0 : parameter $\geq$ parameter$_0$

H_a : parameter < parameter$_0$

3. Two-sided test

H_0 : parameter = parameter$_0$

H_a : parameter $\neq$ parameter$_0$

B. Compute Test Statistic

C. Find P-value or Critical Value

1. Right-sided test

P - value = $P(RV \geq$ observed test statistic$)$

critical value = upper α critical value of the appropriate distribution

2. Left-sided test

P - value = $P(RV \leq$ observed test statistic$)$

critical value = upper α critical value of the appropriate distribution

3. Two-sided test

P - value = $2P\left(RV \geq \left|\text{ observed test statistic}\right|\right)$

critical value = upper $\frac{\alpha}{2}$ critical value of the appropriate distribution

D. State Conclusion

1. Right-sided test

Reject H_0 if P - value $\square$ $\square$

Reject H_0 if observed test statistic $\geq$ critical value

2. Left-sided test

Reject H_0 if P - value $\square$ $\square$

Reject H_0 if observed test statistic $\square$ $\square$ critical value

3. Two-sided test

Reject H_0 if P - value $\square$ $\square$

Reject H_0 if $\left|\text{observed test statistic}\right| \geq$ critical value