



TECHNOLOGY CORNER

22. Significance test for a difference in proportions with HP Prime

HP Prime can be used to perform significance tests for comparing two proportions.

Here, we use the data from the hungry children example. To perform a test of $H_0: p_1 - p_2 = 0$ versus $H_a: p_1 - p_2 \neq 0$:

- Press **Apps** and tap the *Inference* app icon.
- Select the **Method** field, tap **Choose** and select *Hypothesis Test*
- In the **Type** field, select *Z-Test: $\pi_1 - \pi_2$*
- For the alternative hypothesis, select $\pi_1 \neq \pi_2$

Inference Symbolic View

Method: Hypothesis test

Type: Z-Test: $\pi_1 - \pi_2$

Alt Hypoth: $\pi_1 \neq \pi_2$

Choose the alternative hypothesis

Choose

- Press **Num** to enter the Numeric view. Enter $x_1 = 19$, $n_1 = 80$, $x_2 = 26$, $n_2 = 150$, and $\alpha = 0.05$.

Inference Numeric View

x_1 : 19 x_2 : 26

n_1 : 80 n_2 : 150

α : .05

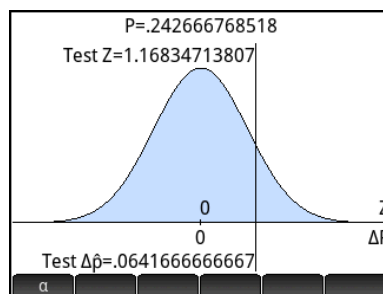
Significance level

Edit Calc

- Tap **Calc** to see the results numerically.

Results	
X	
Result	1
Test Z	1.16834713807
Test $\Delta \hat{p}$.0641666666667
P	.242666768518
Crit. Z	± 1.95996398454
Lower	-.047033114803
Upper	.175366448136
.242666768518	
Size OK	

- Tap **OK** to return to the Numeric view
- Press **Plot** to see the confidence interval graphically. The test probability is shown at the top, with the test z and $\Delta \hat{p}$ values.



- Tap **α** for an alternate view of the test results. Here, the reject area is shown shaded in blue. The test z and $\Delta \hat{p}$ values are clearly not in the shaded reject regions.

