



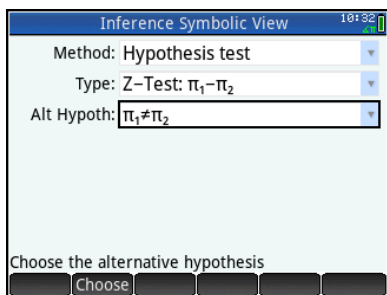
# TECHNOLOGY CORNER

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

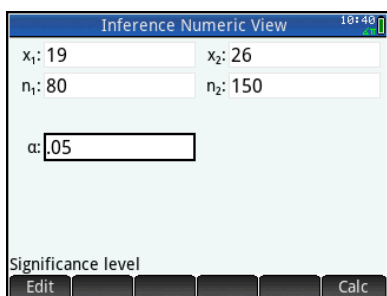
HP Prime can be used to perform significance tests for comparing two proportions.

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  *$\pi_1 \neq \pi_2$*



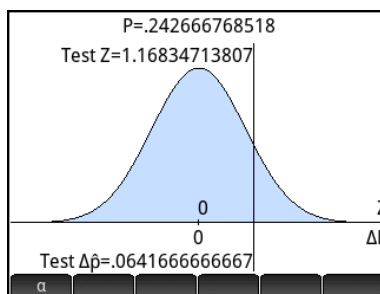
- Press **Num** to enter the Numeric view. Enter  $x_1 = 19$ ,  $n_1 = 80$ ,  $x_2 = 26$ ,  $n_2 = 150$ , and  $\alpha = 0.05$ .



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

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

- 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  **$\alpha$**  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.

