

TECHNOLOGY CORNER

21. Confidence interval for a difference in proportions with HP Prime



HP Prime can be used to construct a confidence interval for $p_1 - p_2$. We'll demonstrate using the previous example. Of $n_1 = 799$ teens surveyed, $X = 639$ said they used social-networking sites. Of $n_2 = 2253$ adults surveyed, $X = 1555$ said they engaged in social networking. To construct a 95% confidence interval:

- Press **Apps** and tap the *Inference* app icon.
- Select the **Method** field, tap **Choose** and select *Confidence Interval*
- In the **Type** field, select *Z-Int: $\pi_1 - \pi_2$*

Inference Symbolic View

Method: Confidence interval

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

Choose a distribution statistic

Choose

- Press **Num** to enter the Numeric view. Enter $x_1=639$, $n_1=799$, $x_2=1555$, $n_2=2253$, and $C=0.95$.

Inference Numeric View

x_1 : 639 x_2 : 1555

n_1 : 799 n_2 : 2253

C : .95

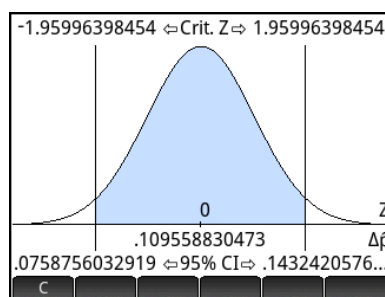
Confidence Level

Edit Calc

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

Results	
X	
C	.95
Crit. Z	± 1.95996398454
Lower	.0758756032919
Upper	.143242057655
95%	
	Size OK

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



- Tap **C** to activate the dynamic confidence interval. Press \uparrow and \downarrow to increase and decrease the confidence level and see the effect on the size of the confidence interval.

