

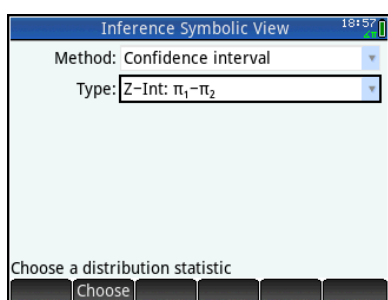
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21. Confidence interval for a difference in proportions with HP Prime

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:

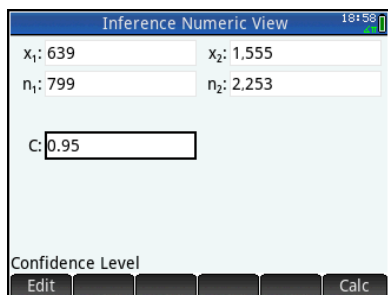
- Set up the confidence interval in the Inference App.

- 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: $\pi_1 - \pi_2$*



- Enter the sample statistics.

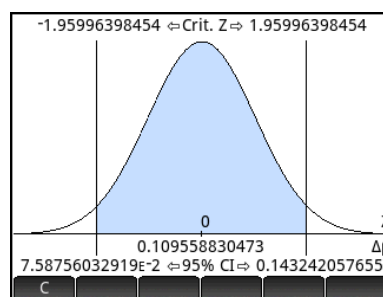
- Press **Num** to enter Numeric view. Enter $x_1 = 639$, $n_1 = 799$, $x_2 = 1555$, $n_2 = 2253$, and $C = 0.95$.



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

Results	
C	0.95
Crit. Z	± 1.95996398454
Lower	$7.58756032919 \times 10^{-2}$
Upper	0.143242057655
95%	
More	

- Tap **OK** to return to the Numeric view
- View the results graphically.
- Press **Plot** to view the confidence interval graphically in 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.

