



## TECHNOLOGY CORNER

### 18. One-proportion z test on the HP Prime

HP Prime can be used to test a claim about a population proportion. We'll demonstrate using the previous example. In a random sample of size  $n = 500$ , the supervisor found  $X = 47$  potatoes with blemishes. To perform a significance test:

- 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: 1  $\pi$*
- For the alternative hypothesis, select  $\pi > \pi_0$

Inference Symbolic View

Method: Hypothesis test

Type: Z-Test: 1  $\pi$

Alt Hypoth:  $\pi > \pi_0$

Choose the alternative hypothesis

Choose

- Press **Num** to enter the Numeric view. Enter  $x=47$ ,  $n=500$ ,  $\pi_0=0.08$ , and  $\alpha=0.05$ .

Inference Numeric View

x: 47

n: 500

$\pi_0$ : .08

$\alpha$ : .05

Success count

Edit Calc

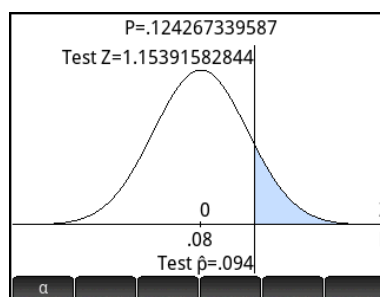
- Tap **Calc** to see the results numerically.

| Results         |               |
|-----------------|---------------|
| X               |               |
| Result          | 1             |
| Test Z          | 1.15391582844 |
| Test $\hat{p}$  | .094          |
| P               | .124267339587 |
| Crit. Z         | 1.64485362695 |
| Crit. $\hat{p}$ | .101466946812 |
|                 | .124267339587 |
|                 | Size OK       |

- Tap **OK** to return to the Numeric view

You can also view the confidence interval graphically.

- Press **Plot** to see the Plot view. The test probability is shown at the top, with the test z and  $\hat{p}$  values.



- Tap  **$\alpha$**  for an alternate view of the test results. Here, the area associated with the alternative hypothesis and  $\alpha$ -level is shown shaded in blue. The test z and  $\hat{p}$  values are shown as well. The test values clearly are not in the shaded reject region. Press **▲** and **▼** to increase and decrease the  $\alpha$ -level.

