

20. One-sample z test for a proportion the calculator

The TI-Nspire can be used to test a claim about a population proportion. We'll demonstrate using the example on page 574. In a random sample of size $n = 500$, the supervisor found $X = 47$ potatoes with blemishes. To perform a significance test:

- Press $\left(\frac{\square}{\square}\right)$ (or $\left(\frac{\square}{\square}\right)$ $\left(\mathbf{A}\right)$) to insert a *Calculator Scratchpad*.
- Press $\left(\text{menu}\right) \rightarrow \text{Statistics} \rightarrow \text{Stat Tests} \rightarrow 1\text{-Prop } z \text{ test}$.
- A dialogue box will appear. Enter the values shown: $p_0 = 0.08$, $x = 47$, and $n = 500$. Specify the alternative hypothesis as " H_a : prop $>$ p_0 ". $\left(\text{tab}\right)$ to $\left(\text{OK}\right)$ and press $\left(\text{enter}\right)$. *Note: x is the number of successes and n is the number of trials. Both must be whole numbers!*

1-Prop z Test

P0: .08

Successes, x: 47

n: 500

Alternate Hyp: Ha: prop > p0

OK Cancel

You can see that the test statistic is $z = 1.15392$ and the P -value is 0.1243.

Scratchpad

zTest_1Prop 0.08,47,500,1: stat.results

"Title"	"1-Prop z Test"
"Alternate Hyp"	"prop > p0"
"z"	1.15392
"PVal"	0.124267
"p"	0.094
"n"	500.

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To display the P -value as a shaded area under the Normal curve:

- Press $\left(\frac{\square}{\square}\right)$, select the *Lists & Spreadsheet* icon $\left(\frac{\square}{\square}\right)$.
- Press $\left(\text{menu}\right) \rightarrow \text{Statistics} \rightarrow \text{Stat Tests} \rightarrow 1\text{-Prop } z \text{ test}$.

A dialogue box will appear: Enter the values as shown in the box below. Check the box to *Shade P Value*. (tab) to and press (enter).

1-Prop z Test

P0: .08

Successes, x: 47

n: 500

Alternate Hyp: Ha: prop > p0

1st Result Column: b[]

Draw: Shade P Value

