

18. TECHNOLOGY CORNER

ONE-PROPORTION z TEST ON THE CALCULATOR

TI-Nspire instructions in Appendix B; HP Prime instructions on the book's Web site.

The TI-89 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:

TI-89

- In the Statistics/List Editor, press **[2nd]** **[F1]** ([F6]) and choose 1-PropZTest.
- On the 1-PropZTest screen, enter the values shown: $p_0 = 0.08$, $x = 47$, and $n = 500$. Specify the alternative hypothesis as " $\text{prop} > p_0$." Note: x is the number of successes and n is the number of trials. Both must be whole numbers!

1-PropZTest

$p_0 = 0.08$

Successes, $x = 47$

$n = 500$

Alternate Hyp: $\text{prop} > p_0$

Results: **NO ANSWER**

Enter=OK ESC=Cancel

list1=(0,1,2,3,4,5,6,7,8,...)

USE \leftarrow AND \rightarrow TO OPEN CHOICES

- If you select "Calculate" and press **[ENTER]**, you will see that the test statistic is $z = 1.15$ and the P -value is 0.1243.

1-PropZTest

$\text{prop} > p_0$

$p_0 = 0.08$

$z = 1.15392$

$P\text{-value} = 0.124267$

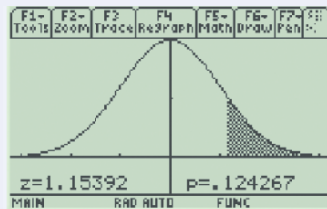
$n = 500$

Enter=OK

list1=(0,1,2,3,4,5,6,7,8,...)

MAIN RAD AUTO FUNC 1/6

- If you select the "Draw" option, you will see the screen shown here. Compare these results with those in the example on page 559.



AP® EXAM TIP You can use your calculator to carry out the mechanics of a significance test on the AP® exam. But there's a risk involved. If you just give the calculator answer with no work, and one or more of your values is incorrect, you will probably get no credit for the "Do" step. If you opt for the calculator-only method, be sure to name the procedure (one-proportion z test) and to report the test statistic ($z = 1.15$) and P -value (0.1243).