

One-Proportion z-Tests

Last chapter we just asked the calculator to compute a z-Interval for one proportion. Now let's ask it to conduct a z-Test for one proportion.

Let's use the data from the Smoke Detectors example.

```
EDIT CALC TESTS
1:Z-Test...
2:T-Test...
3:2-SampZTest...
4:2-SampTTest...
5:1-PropZTest...
6:2-PropZTest...
7:ZInterval...
```

STAT

TESTS

We're using a Normal model to test a hypothesis based on *one sample*. So scroll down to **5:1-PropZTest**.

```
1-PropZTest
P0:.9
x:376
n:400
PROP≠P0 <P0 >P0
Calculate Draw
```

Specify the hypothesized proportion, P_0 , as .90.

Enter x , the observed number of successes: 376.

Specify n , the sample size: 400.

Now comes a potentially tricky question...is this test:

- one-tail lower,
- one-tail upper, or
- two-tailed?

In this case, we're looking at a one-tailed upper test, so we want to see the observed proportion that is greater than the hypothesized value.

```
1-PropZTest
PROP>.9
z=2.666666667
P=.0038304251
P̂=.94
n=400
```

Calculate

The rest is up to you! The calculator gives you the P-value; it's your job to make sense of it.

Is the result small enough that you *reject the null*, or is it large enough that you *fail to reject the null*? (Remember to **never accept the null**.)

```
1-PropZInt
(.91673,.96327)
P̂=.94
n=400
```

Why not run back through a **1-PropZInt** to give you further evidence to comment on – in context, of course!