CONDO Sample 1 Hypothesis Test
STAT I, MAT123, Project Part 2, © 2025, A. Azzolino

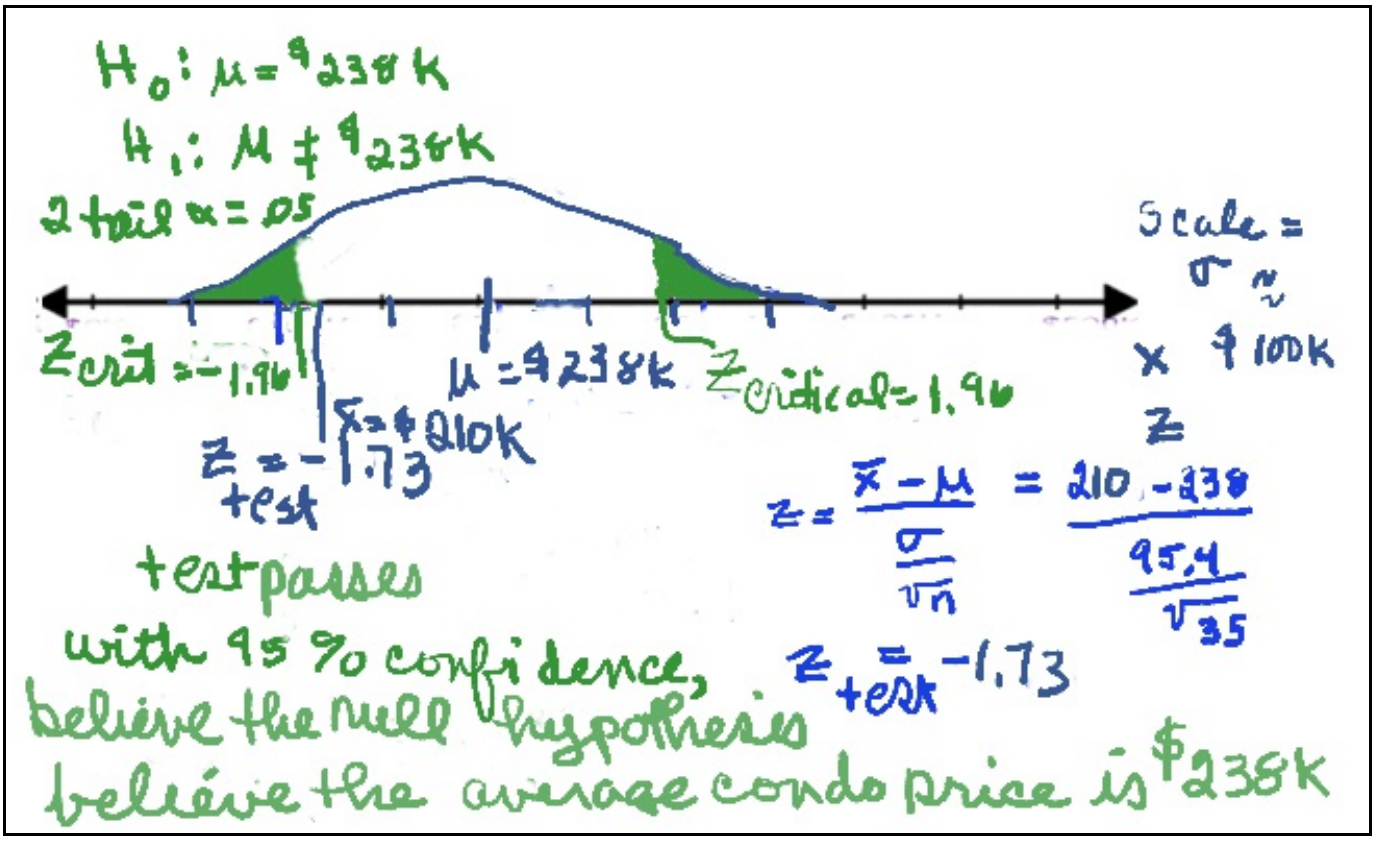
In a sample of 35 properties, the average price of a condo is $210,000, but prices range from a high of $335,00 to a low of $175,000.

The inner quartile range, the middle 50% of the sale prices, is from $85,000, from $260,000 down to $175,000. The costliest condo sold at $335,000 and the least expensive property sold at $89,990 (just below $90,000).

The standard deviation was about $67,000.

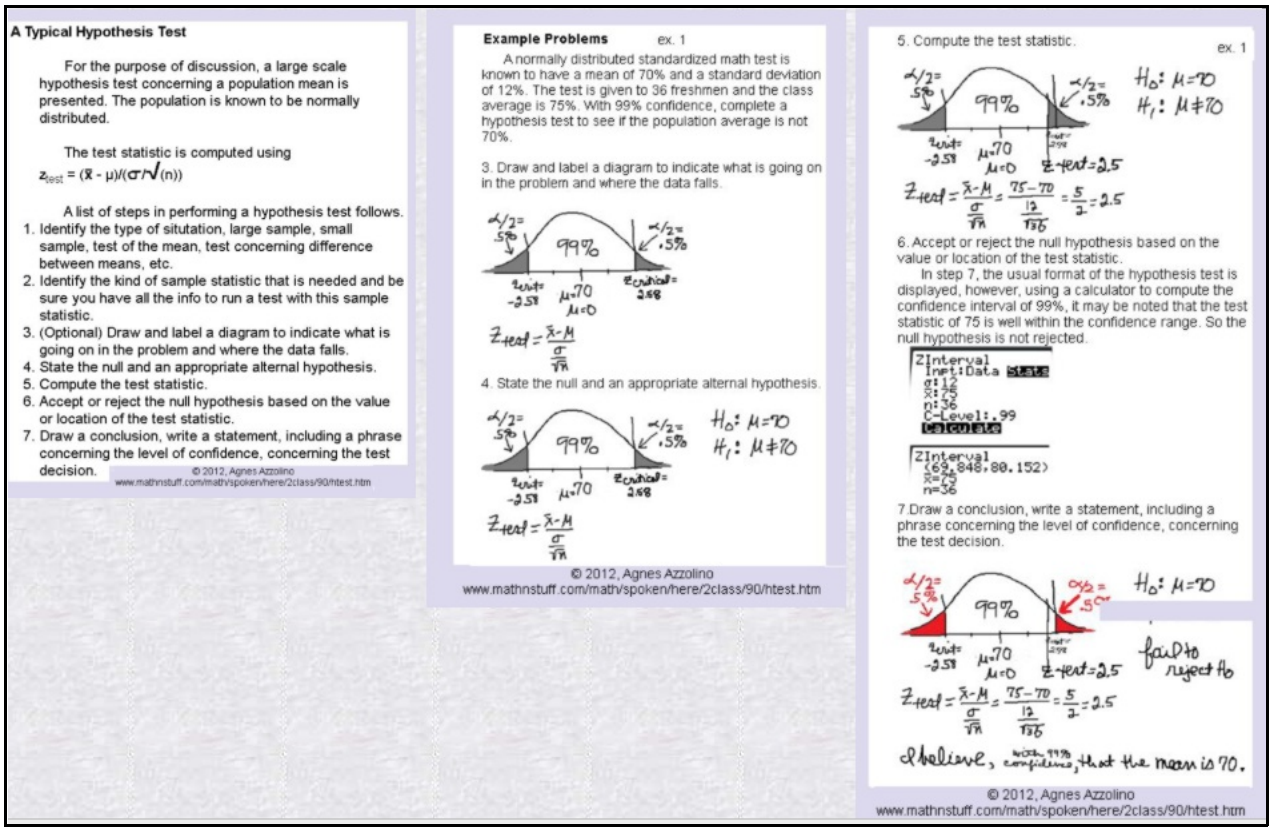
Condo Null Hypothises	
Population,	sale_price
μ, population mean	238,028.96
σ, standard deviation	95,382.32

Information about all condos in Edison reported, the population mean, mu, was $238, 028.96 and population standard deviation, sigma, was $95,382.32.



Based on a 2-tail hypothesis test with 95% confidence, this statistician believes the average condo price inEdison is $210,000.

Notes and the sample follow



A Typical Hypothesis Test

For the purpose of discussion, a large scale hypothesis test concerning a population mean is presented. The population is known to be normally distributed.

The test statistic is computed using

$z_{test} = (\bar{x} - \mu)/(\sigma/\sqrt{(n)})$

A list of steps in performing a hypothesis test follows.

1. Identify the type of situtation, large sample, small sample, test of the mean, test concerning difference between means, etc.
2. Identify the kind of sample statistic that is needed and be sure you have all the info to run a test with this sample statistic.
3. (Optional) Draw and label a diagram to indicate what is going on in the problem and where the data falls.
4. State the null and an appropriate alternal hypothesis.
5. Compute the test statistic.
6. Accept or reject the null hypothesis based on the value or location of the test statistic.
7. Draw a conclusion, write a statement, including a phrase concerning the level of confidence, concerning the test decision.

Example Problems ex. 1

A normally distributed standardized math test is known to have a mean of 70% and a standard deviation of 12%. The test is given to 36 freshmen and the class average is 75%. With 99% confidence, complete a hypothesis test to see if the population average is not 70%.

3. Draw and label a diagram to indicate what is going on in the problem and where the data falls.

$Z_{test} = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}}$

4. State the null and an appropriate alternal hypothesis.

$H_0: \mu = 70$
$H_1: \mu \neq 70$

$Z_{test} = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}}$

5. Compute the test statistic. ex. 1

$H_0: \mu = 70$
$H_1: \mu \neq 70$

$Z_{test} = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}} = \frac{75 - 70}{\frac{12}{\sqrt{36}}} = \frac{5}{2} = 2.5$

6. Accept or reject the null hypothesis based on the value or location of the test statistic.

In step 7, the usual format of the hypothesis test is displayed, however, using a calculator to compute the confidence interval of 99%, it may be noted that the test statistic of 75 is well within the confidence range. So the null hypothesis is not rejected.

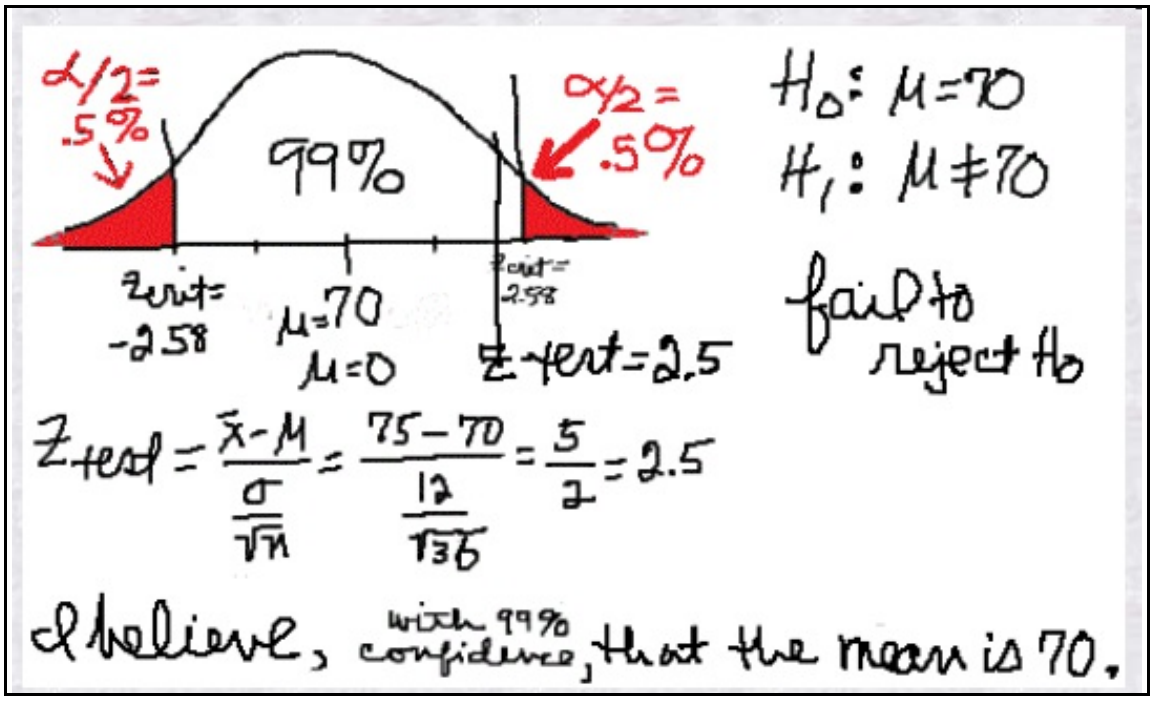
7. Draw a conclusion, write a statement, including a phrase concerning the level of confidence, concerning the test decision.

$H_0: \mu = 70$

fail to reject H_0

$Z_{test} = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}} = \frac{75 - 70}{\frac{12}{\sqrt{36}}} = \frac{5}{2} = 2.5$

I believe, with 99% confidence, that the mean is 70.



Condo	mean	175,125.00	condo.sample.01.no:	
35, 37 Row-Town House	st deviation	85,029.59		
Sample Name	property #	sale_price	property #	
condo.sample.01.no:	1	235,250	1	89,990
condo.sample.01.no:	2	265,000	2	90,990
condo.sample.01.no:	3	210,000	3	90,990
condo.sample.01.no:	4	260,000	4	90,990
condo.sample.01.no:	5	89,990	5	91,990
condo.sample.01.no:	6	192,000	6	91,990
condo.sample.01.no:	7	190,281	7	115,000
condo.sample.01.no:	8	153,900	8	153,900
condo.sample.01.no:	9	269,000	9	175,000
condo.sample.01.no:	10	225,000	10	183,000
condo.sample.01.no:	11	253,000	11	187,341
condo.sample.01.no:	12	227,000	12	190,281
condo.sample.01.no:	13	90,990	13	192,000
condo.sample.01.no:	14	284,000	14	196,000
condo.sample.01.no:	15	175,000	15	197,900
condo.sample.01.no:	16	231,500	16	200,000
condo.sample.01.no:	17	91,990	17	207,500
condo.sample.01.no:	18	91,990	18	210,000
condo.sample.01.no:	19	207,500	19	225,000
condo.sample.01.no:	20	246,500	20	226,000
condo.sample.01.no:	21	183,000	21	227,000
condo.sample.01.no:	22	90,990	22	231,500
condo.sample.01.no:	23	238,000	23	235,250
condo.sample.01.no:	24	335,000	24	238,000
condo.sample.01.no:	25	226,000	25	246,500
condo.sample.01.no:	26	196,000	26	253,000
condo.sample.01.no:	27	200,000	27	260,000
condo.sample.01.no:	28	187,341	28	265,000
condo.sample.01.no:	29	268,000	29	268,000
condo.sample.01.no:	30	90,990	30	269,000
condo.sample.01.no:	31	270,000	31	270,000
condo.sample.01.no:	32	286,000	32	270,000
condo.sample.01.no:	33	197,900	33	284,000
condo.sample.01.no:	34	270,000	34	286,000
condo.sample.01.no:	35	115,000	35	335,000