1) Population: (ALL)
2) Parameter
3) Type of Test
4) Conditions
5) Hypothesis
6) Calculations, Statistics, Formula
(STAT CRUNCH)
p-value
7) Conclusion

1. We would like to determine if the typical amount spent per customer for dinner at a new restaurant in town is more than $20.00. A sample of 36 customers over a three-week period were randomly selected and the mean amount spent was $23.60. The standard deviation of the sample was found to be $2.50. Conduct and appropriate hypothesis test to see if the typical amount spent per customer is more than $20.00?

* Population: All customers who go to a restaurant for dinner

* Parameter: (μ) Mean amount of money spent on dinner per customer in $.

* Type of Test: 1- Samp T (test)

* Conditions: Random Samp ✓ 10n < Pop Size ✓ $n \geq 30$ ✓

Hypothesis: (Parameters)

$H_0: \mu = 20$

$H_a: \mu > 20$

(what we are testing)

1. We would like to determine if the typical amount spent per customer for dinner at a new restaurant in town is more than $20.00. A sample of 36 customers over a three-week period were randomly selected and the mean amount spent was $23.60. The standard deviation of the sample was found to be $2.50. Conduct and appropriate hypothesis test to see if the typical amount spent per customer is more than $20.00?

$\bar{x} = 23.6$ ✓ $n = 36$ ✓

1-SampT (*) $s = 2.5$ ✓

z or t $\bar{x}$ μ

Formula: standardized value = $\frac{\text{stat} - \text{param}}{\text{SD of statistic}}$

$H_0: \mu = 20$ (*)

$H_a: \mu > 20$

Std. Error (*) .4167 D.F = 35

t-stat 8.64

p-value ≈ .0001

$$* \; t = \frac{\bar{x} - \mu_0}{\left(\frac{s}{\sqrt{n}}\right)}$$ ✓

7. Conclusion: (p-value ≈ .0001)

$\bar{x} = 23.6$
$s = 2.5$
$n = 36$

$H_0: \mu = 20$

Since our p-value is less than 5%, we reject the H_0, which means the evidence suggests (H_a) the mean amount of money spent on dinner per customer at the reasturant is more than \$20.00.

P-value: There is approx. a .0001 chance that we would get a sample mean of \$23.6 or higher (H_a) given the H_0 ($\mu = 20$) is true.