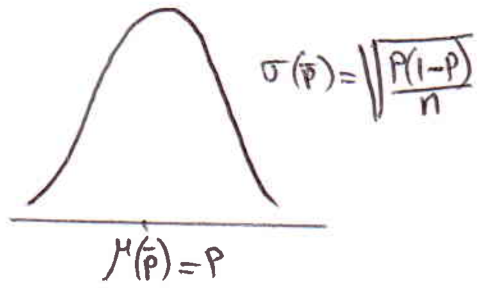
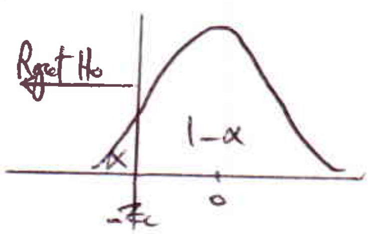
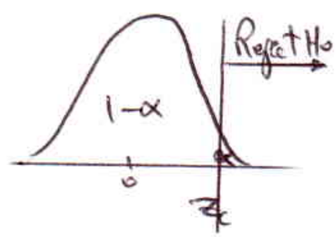
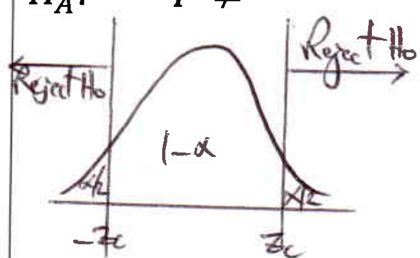
1. Binomial conditions have to be valid.
2. $n\bar{p}\ \geq 5$ and
3. $n(1-\bar{P}) \geq 5$
4. Then the CLT says that the sampling distribution for $\bar{p}$ will be bell shaped with

$$\mu(\bar{P}) = P \quad \text{and} \quad \sigma(\bar{p}) = \sqrt{\frac{P(1-P)}{n}}$$



$H_o = Null\ Hypothesis$
$H_A = Alternative\ Hypothesis$

In hypothesis testing: Your claim (what you are trying to prove) must be worded in H_A, Because you control the level of confidence of the test.

One Tailed Test: Left Tail	One Tailed test: Right Tail	Two Tailed Test.
H_o: $P =$ H_A: $P <$ 	H_o: $P =$ H_A: $P >$ 	H_o: $P =$ H_A: $P \neq$ 

Procedure:

1. Make a sketch.
2. Find z_c = Z critical from the given level of confidence.
3. Use the CLT to Compute $z_{test}=\dfrac{\bar{p}-p}{\sqrt{\frac{p(1-p)}{n}}}$
4. State your conclusion
5. Compute the P-value.

Your conclusion has to be one of two:
Either:

1. There is sufficient evidence to Reject H_o which means support H_A

Or

2. There is Insufficient evidence to Reject H_o. This means fail to reject H_o, which means fail to support H_A.

The P-value = The probability of getting a sample as extreme as the one you have in the given problem.

α = Level of Significance, 1 - α = level of Confidence

If the P-value $\leq \alpha$: Reject H_o which means support H_A

If the P-Value > α : Fail to Reject H_o which means Fail to support H_A

TI 84: Stat----- Tests ----- 1-Proportion Z Test.

Type I and Type II Errors

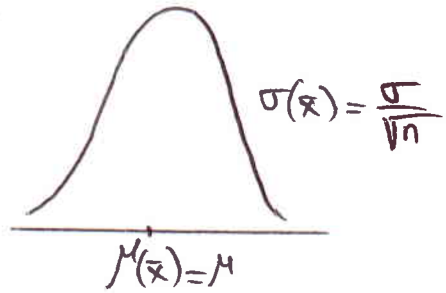
		True State of Nature: The null hypothesis is true	True State of Nature: The null hypothesis is false
Decision	We decide to reject the null hypothesis	**Type I error** (rejecting a true null hypothesis) P(type I error) = α	Correct decision
	We fail to reject the null hypothesis	Correct decision	**Type II error** (failing to reject a false null hypothesis) P(type II error) = β

Hypothesis Testing for μ

σ is known

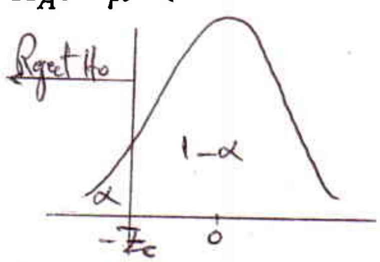
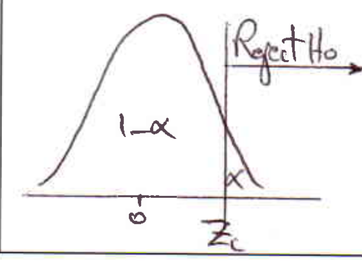
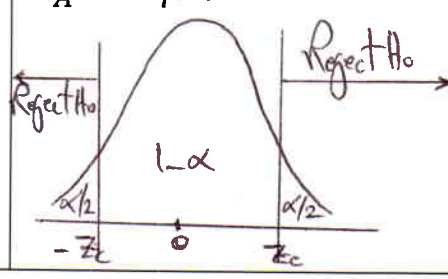
1. n > 30 or the population distribution is bell shaped to start with.
2. Then the CLT says that the sampling for $\bar{x}$ will be bell shaped with

$$\mu(\bar{x}) = \mu \quad \text{and} \quad \sigma(\bar{x}) = \frac{\sigma}{\sqrt{n}}$$



$H_o = \textit{Null Hypothesis}$
$H_A = \textit{Alternative Hypothesis}$

In hypothesis testing: Your claim (what you are trying to prove) must be worded in H_A, Because you control the level of confidence of the test.

One Tailed Test: Left Tail	One Tailed test: Right Tail	Two Tailed Test.
H_o: $\mu =$ H_A: $\mu <$ 	H_o: $\mu =$ H_A: $\mu >$ 	H_o: $\mu =$ H_A: $\mu \neq$ 

<u>Procedure:</u>

1. Make a sketch.
2. Find z_c = Z critical from the given level of confidence.
3. Use the CLT to Compute $z_{test} = \dfrac{\bar{x}-\mu}{\frac{\sigma}{\sqrt{n}}}$
4. State your conclusion
5. Compute the P-value.

Your conclusion has to be one of two:
Either:

1. There is sufficient evidence to Reject H_o which means support H_A

Or

2. There is Insufficient evidence to Reject H_o. This means fail to reject H_o, which means fail to support H_A.

The P-value = The probability of getting a sample as extreme as the one you have in the given problem.

α = Level of Significance, 1 - α = level of Confidence

If the P-value $\leq \alpha$: Reject H_o which means support H_A

If the P-Value > α : Fail to Reject H_o which means Fail to support H_A

TI 84: Stat----- Tests ----- Z- Test.

Type I and Type II Errors

		True State of Nature	
		The null hypothesis is true	The null hypothesis is false
Decision	We decide to reject the null hypothesis	**Type I error** (rejecting a true null hypothesis) $P(\text{type I error}) = \alpha$	Correct decision
	We fail to reject the null hypothesis	Correct decision	**Type II error** (failing to reject a false null hypothesis) $P(\text{type II error}) = \beta$

Hypothesis Testing for μ

σ is not known

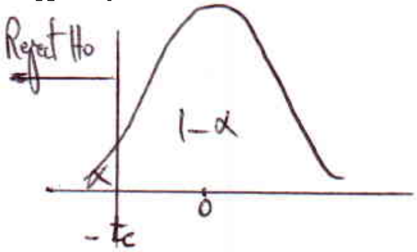
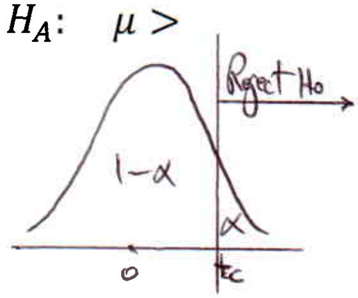
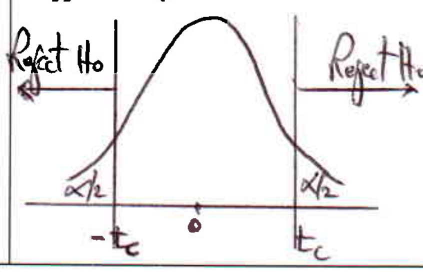
1. $n > 30$ or the population distribution is bell shaped to start with.
2. Then the CLT says that the sampling for $\bar{x}$ will be bell shaped with

$$\mu(\bar{x}) = \mu$$

Since σ is not known, we use the student t- Distribution

H_o = *Null Hypothesis*
H_A = *Alternative Hypothesis*

In hypothesis testing: Your claim (what you are trying to prove) must be worded in H_A, Because you control the level of confidence of the test.

One Tailed Test: Left Tail	One Tailed test: Right Tail	Two Tailed Test.
H_o: $\mu =$ H_A: $\mu <$	H_o: $\mu =$ H_A: $\mu >$	H_o: $\mu =$ H_A: $\mu \neq$
		

<u>Procedure:</u>

1. Make a sketch.
2. Degrees of Freedom = d.f. = n-1
3. Find t_c = t critical from the given level of confidence.
4. Use the CLT to Compute $t_{test} = \dfrac{\bar{x}-\mu}{\frac{s}{\sqrt{n}}}$
5. State your conclusion
6. Compute the P-value.

Your conclusion has to be one of two:
Either:

1. There is sufficient evidence to Reject H_o which means support H_A

Or

2. There is Insufficient evidence to Reject H_o. This means fail to reject H_o, which means fail to support H_A.

The P-value = The probability of getting a sample as extreme as the one you have in the given problem.

α = Level of Significance, 1 - α = level of Confidence

If the P-value $\leq \alpha$: Reject H_o which means support H_A

If the P-Value > : Fail to Reject H_o which means Fail to support H_A

TI 84: Stat----- Tests ----- T- Test.

Type I and Type II Errors

		True State of Nature	
		The null hypothesis is true	The null hypothesis is false
Decision	We decide to reject the null hypothesis	**Type I error** (rejecting a true null hypothesis) P(type I error) = α	Correct decision
	We fail to reject the null hypothesis	Correct decision	**Type II error** (failing to reject a false null hypothesis) P(type II error) = β