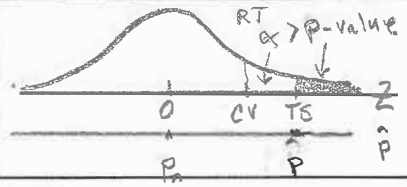
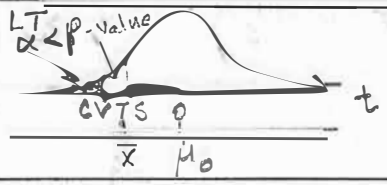
Steps for Hypothesis Testing

	Steps	Proportions 8.2 One Sample 9.1 Two Samples	Means 8.3 One Sample 9.2 Two Samples
1	Check requirements SRS	np>5 and nq>5	n>30 or parent poulation is normal
2	**Ho and H1**: Null and Alternate hypothesis: Ho is always = If Claim is: <, >, ≠, ≤, ≥, = Then H1 is: <, >, ≠, >, <, ≠	Ho:p=po or Ho:p1 = p2	Ho: μ = μo or Ho: μ1 = μ2
3	**PE: Point Estimate** The PE is best guess of the population parameter based on our sample summary statistics	PE:$\hat{p}$ =x/n PE: $\hat{p}$1 - $\hat{p}$ 2 = x1/n1 - x2/n2	PE:$\bar{x}$ or PE:$\bar{x}$1-$\bar{x}$2 Write n and s or n1, n2, s1, and s2 Use 1-varStats
4	**CV: Critical Values** TS further from zero than CV are statistically significant	Z* = invNorm(Area,0,1) Left Tail area = α Right Tail Area = 1 - α Two tail area = 1 - α/2	t* = invT(Area, df) df = n-1 Left Tail area = α Right Tail Area = 1 - α Two tail area = 1 - α/2
5	**TS: Test Statistics** The TS is T-score or Z-score of the PE or sample assuming that Ho is true	1PropZtest or 2 PropZTest $Z = \frac{\hat{p} - po}{\sqrt{pq/n}}$	TTest or 2SampTTest $t = \frac{\bar{x} - \mu}{s/\sqrt{n}}$
6	**Draw** Sampling Distribution Z-axis show 0, CV, TS, x-axis has Ho, PE Line up TS and PE vertically on axes		
7	**P-Value** If the *null hypothesis is true* there is a *p-value* probability of seeing *a sample* as or more extreme than *our data* .	p-value = normalCDF(TS,9999,0,1) RT normalCDF(-9999,TS,0,1) LT 2-tails:p-value = 2*smaller Area	p-value = TCDF(TS,9999,0,1) RT TCDF(-9999,TS,0,1) LT 2-tails:p-value = 2*smaller Area
8	**Initial Conclusion**	If p-value < α Then Reject Ho or If p-value > α then Fail to Reject Ho	If p-value < α Then Reject Ho or If p-value > α then Fail to Reject Ho
9	**Write Final Conclusion:** Describe population parameter with words from question.	Reject population proportions are equal and support not equal or Fail to reject equal and fail to support not equal	Reject population means are equal and support not equal or Fail to reject equal and fail to support not equal