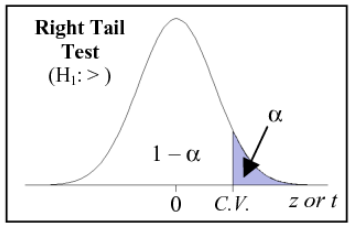
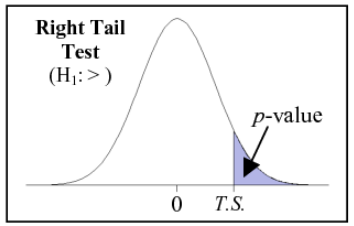
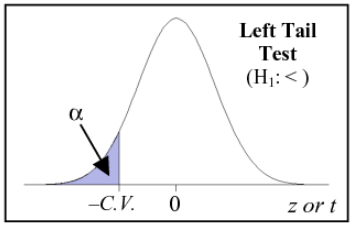
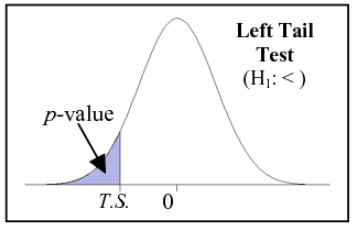
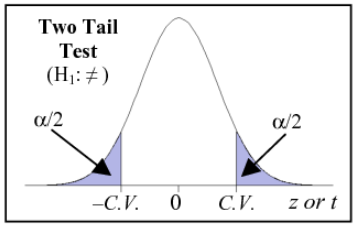
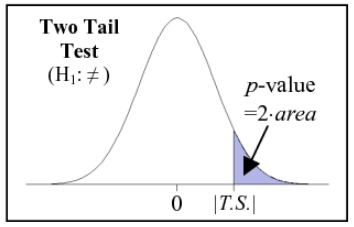
Single Sample Hypothesis Test Summary

Type of Test	(1) Gather Data & Verify Requirements	(2) Level of Signif-icance	(3) Set up H_0 (null hypothesis) & H_1 (alternative hypothesis)	(4) Compute the Test Statistic (T.S.)	(5) Look up the critical value Pick *one* According to Type of Test	(6) Look up the *p*-value Pick *one* According to Type of Test	(7) Make a Conclusion
							In each case, whenever the test statistic (T.S.) lies in a tail beyond a critical value (C.V.), we reject the null hypothesis in favor of the alternative (in this case a statement of support is *strong*). Otherwise, we fail to reject the null hypothesis (in this case a statement of support is *weak*).
Mean μ σ known	$\bar{x}$, σ, n Requirement: $n > 30$ or population is normal.	α	H_0 : $\mu = value$ H_1 is one of: $\mu > value$ $\mu < value$ $\mu \neq value$ (choose only one)	T.S.: $z = \dfrac{\bar{x} - \mu}{\sigma/\sqrt{n}}$			
Mean μ σ unknown	$\bar{x}$, s, n Requirement: $n > 30$ or population is normal.	α	H_0 : $\mu = value$ H_1 is one of: $\mu > value$ $\mu < value$ $\mu \neq value$ (choose only one)	T.S.: $t = \dfrac{\bar{x} - \mu}{s/\sqrt{n}}$			

Looking up critical values (C.V.) in Table A2

d.f.	α One/Two Tail Applications	
	α	
***n* – 1**	*t C.V.*	
Large(z)	*z C.V.*	

Computing *p*-values

1. Look up area to left of the T.S. in Table A1 or A3
   For a 2-tail test, use the absolute value of the T.S.

z distribution (Tab. A1)

z	*1/100th's place*
T.S.	*Area*

t distribution (Tab. A3)

t	*d.f. = n – 1*
T.S.	*Area*

Computing *p*-values *Continued*

2. Compute the *p*-value using the area found in step 1.
   a. For a right-tail test, *p*-value = 1 – *area in table*.
   b. For a left-tail test, *p*-value = *area in table*.
   c. For a 2 tail test, *p*-value = 2·(1 – *area in table*).