Confidence Interval of the form: Point estimate ± multiplier * SE						
	One sample mean	One sample proportion	Matched Pairs for differences	Two sample means unequal variances	Two sample means equal variances	Two sample proportions
Assumptions	SRS	SRS	SRS	SRS from two independent populations	SRS from two independent populations	SRS from two independent populations
	Normal pop.	$n\hat{p} \geq 15$ and $n(1-\hat{p}) \geq 15$	Normal pop. of differences	Normal pop.	Normal pop.	At least 10 successes and failures in each sample
Point Estimate	$\overline{x}$	$\hat{p}$	$\overline{d}$	$\overline{x_1} - \overline{x_2}$	$\overline{x_1} - \overline{x_2}$	$\hat{p_1} - \hat{p_2}$
Multiplier	t^*, $df = n-1$	z^*	t^*, $df = n-1$	t^*, $df = \min(n_1, n_2)$-1	t^*, $df = n_1 + n_2 - 2$	z^*
SE	$\frac{s}{\sqrt{n}}$	$\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$	$\frac{s_d}{\sqrt{n}}$	$\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$	$s_p = \sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{(n_1+n_2-2)}}$ $SE = s_p\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}$	$\sqrt{\frac{\widehat{p_1}(1-\widehat{p_1})}{n_1} + \frac{\widehat{p_2}(1-\widehat{p_2})}{n_2}}$
$100(1-\alpha)\%$ C.I	$\overline{x} \pm t^*(SE)$ $df = n-1$	$\hat{p} \pm z^*(SE)$	$\overline{d} \pm t^*(SE)$ $df = n-1$	$(\overline{x_1} - \overline{x_2}) \pm t^*(SE)$ $df = \min(n_1, n_2) - 1$	$(\overline{x_1} - \overline{x_2}) \pm t^*(SE)$ $df = n_1 + n_2 - 2$	$(\hat{p_1} - \hat{p_2}) \pm z^*(SE)$

Finding p-values

Proportions(use z table)			Means(use t table)		
Direction of H_a	p-value	Tail	Direction of H_a	p-value	Tail
$<$	$P(Z \leq z_c)$	left tail area	$<$	$P(t \leq t_c)$	left tail area
$>$	$P(Z \geq z_c)$	right tail area	$>$	$P(t \geq t_c)$	right tail area
$\neq$	$2 * P(Z \geq \|z_c\|)$	2(right tail area)	$\neq$	$2 * P(t \geq \|t_c\|)$	2(right tail area)

Hypothesis Tests (Tests of Significance)

	One sample mean	One sample proportion	Matched Pairs for differences	Two sample means unequal variances	Two sample means equal variances	Two sample proportions
Assumptions	SRS	SRS	SRS	SRS from two independent populations	SRS from two independent populations	SRS from two independent populations
	Normal pop.	$n\hat{p} \geq 15$ and $n(1-\hat{p}) \geq 15$	Normal pop. of differences	Normal pop.	Normal pop.	At least 5 successes and failures in each sample
Hypotheses	$H_0 : \mu = \mu_0$ $H_a : \mu < \mu_0$ $H_a : \mu > \mu_0$ $H_a : \mu \neq \mu_0$	$H_0 : p = p_0$ $H_a : p < p_0$ $H_a : p > p_0$ $H_a : p \neq p_0$	$H_0 : \mu_d = 0$ $H_a : \mu_d < 0$ $H_a : \mu_d > 0$ $H_a : \mu_d \neq 0$	$H_0 : \mu_1 - \mu_2 = 0$ $H_a : \mu_1 - \mu_2 < 0$ $H_a : \mu_1 - \mu_2 > 0$ $H_a : \mu_1 - \mu_2 \neq 0$	$H_0 : \mu_1 - \mu_2 = 0$ $H_a : \mu_1 - \mu_2 < 0$ $H_a : \mu_1 - \mu_2 > 0$ $H_a : \mu_1 - \mu_2 \neq 0$	$H_0 : p_1 - p_2 = 0$ $H_a : p_1 - p_2 < 0$ $H_a : p_1 - p_2 > 0$ $H_a : p_1 - p_2 \neq 0$
Test Statistic	$t_c = \frac{\overline{x} - \mu_0}{SE}$ $df = n - 1$	$z_c = \frac{\hat{p} - p_0}{SE}$	$t_c = \frac{\overline{d} - 0}{SE}$ $df = n - 1$	$t_c = \frac{(\overline{x_1} - \overline{x_2}) - (\mu_1 - \mu_2)}{SE}$ $df = \min(n_1, n_2) - 1$	$t_c = \frac{(\overline{x_1} - \overline{x_2}) - (\mu_1 - \mu_2)}{SE}$ $df = n_1 + n_2 - 2$	$z_c = \frac{(\hat{p_1} - \hat{p_2}) - (p_1 - p_2)}{SE}$
SE	$\frac{s}{\sqrt{n}}$	$\sqrt{\frac{p_0(1-p_0)}{n}}$	$\frac{s_d}{\sqrt{n}}$	$\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$	$s_p = \sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{(n_1+n_2-2)}}$ $SE = s_p\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}$	$\sqrt{\hat{p}(1-\hat{p})(\frac{1}{n_1} + \frac{1}{n_2})}$ $\hat{p} = \frac{x_1 + x_2}{n_1 + n_2}$
p-value	See previous page					
Decision	If p-value $< \alpha$, reject H_0. If p-value $\geq \alpha$, fail to reject H_0.					
Conclusion	When we reject H_0: There is significant evidence that {rewrite H_a in words}. When we fail to reject H_0: There is insufficient evidence that {rewrite H_a in words}.					