Hypothesis	Statistic	Dist.	Decision Rule: Reject H_0 if	Note
$H_0{:}\mu = \mu_0$ $H_1{:}\mu \neq \mu_0$	$\dfrac{\bar{x}-\mu_0}{\sigma/\sqrt{n}}$	z	$\dfrac{\bar{x}-\mu_0}{\sigma/\sqrt{n}} \leq -z_{1-(\alpha/2)}$ or $\dfrac{\bar{x}-\mu_0}{\sigma/\sqrt{n}} \geq z_{1-(\alpha/2)}$	Population standard devitation σ is know, and population is normally distributed or n is large.
	$\dfrac{\bar{x}-\mu_0}{s/\sqrt{n}}$	t_{n-1}	$\dfrac{\bar{x}-\mu_0}{s/\sqrt{n}} \leq -t_{n-1,1-(\alpha/2)}$ or $\dfrac{\bar{x}-\mu_0}{s/\sqrt{n}} \geq t_{n-1,1-(\alpha/2)}$	Population standard devitation σ is unknow. Population is normally distributed or n is large (greater then or equal to 30).
$H_0{:}\mu \leq \mu_0$ $H_1{:}\mu > \mu_0$	$\dfrac{\bar{x}-\mu_0}{\sigma/\sqrt{n}}$	z	$\dfrac{\bar{x}-\mu_0}{\sigma/\sqrt{n}} \geq z_{1-\alpha}$	Population standard devitation σ is know. Population is normally distributed or n is large ($n \geq 30$).
	$\dfrac{\bar{x}-\mu_0}{s/\sqrt{n}}$	t_{n-1}	$\dfrac{\bar{x}-\mu_0}{s/\sqrt{n}} \geq t_{n-1,1-\alpha}$	Population standard devitation σ is unknow. Population is normally distributed or n is large ($n \geq 30$).
$H_0{:}\mu \geq \mu_0$ $H_1{:}\mu < \mu_0$	$\dfrac{\bar{x}-\mu_0}{\sigma/\sqrt{n}}$	z	$\dfrac{\bar{x}-\mu_0}{\sigma/\sqrt{n}} \leq -z_{1-\alpha}$	Population standard devitation σ is know. Population is normally distributed or n is large ($n \geq 30$).
	$\dfrac{\bar{x}-\mu_0}{s/\sqrt{n}}$	t_{n-1}	$\dfrac{\bar{x}-\mu_0}{s/\sqrt{n}} \leq -t_{n-1,1-\alpha}$	Population standard devitation σ is unknow. Population is normally distributed or n is large ($n \geq 30$).

Hypothesis	Statistic	Dist.	Decision Rule: Reject H_0 if	Note
$H_0{:}p = p_0$ $H_1{:}p \neq p_0$	$\dfrac{\hat{p}-p_0}{\sqrt{p_0(1-p_0)/n}}$	z	$\dfrac{\hat{p}-p_0}{\sqrt{p_0(1-p_0)/n}} \leq -z_{1-(\alpha/2)}$ or $\dfrac{\hat{p}-p_0}{\sqrt{p_0(1-p_0)/n}} \geq z_{1-(\alpha/2)}$	np and $n(1-p)$ must be large (≥ 5).
$H_0{:}p \leq p_0$ $H_1{:}p > p_0$	$\dfrac{\hat{p}-p_0}{\sqrt{p_0(1-p_0)/n}}$	z	$\dfrac{\hat{p}-p_0}{\sqrt{p_0(1-p_0)/n}} \geq z_{1-\alpha}$	np and $n(1-p)$ must be large (≥ 5).
$H_0{:}p \geq p_0$ $H_1{:}p < p_0$	$\dfrac{\hat{p}-p_0}{\sqrt{p_0(1-p_0)/n}}$	z	$\dfrac{\hat{p}-p_0}{\sqrt{p_0(1-p_0)/n}} \leq -z_{1-\alpha}$	np and $n(1-p)$ must be large (≥ 5).

Hypothesis	Statistic	Dist.	Decision Rule: Reject H_0 if	Note
$H_0{:}\sigma^2 = \sigma_0^2$ $H_1{:}\sigma^2 \neq \sigma_0^2$	$\dfrac{(n-1)s^2}{\sigma_0^2}$	χ^2_{n-1}	$\dfrac{(n-1)s^2}{\sigma_0^2} \leq \chi^2_{n-1,\alpha/2}$ or $\dfrac{(n-1)s^2}{\sigma_0^2} \geq \chi^2_{n-1,1-(\alpha/2)}$	Population must be normally distributed.
$H_0{:}\sigma^2 \leq \sigma_0^2$ $H_1{:}\sigma^2 > \sigma_0^2$	$\dfrac{(n-1)s^2}{\sigma_0^2}$	χ^2_{n-1}	$\dfrac{(n-1)s^2}{\sigma_0^2} \geq \chi^2_{n-1,1-\alpha}$	Population must be normally distributed.
$H_0{:}\sigma^2 \geq \sigma_0^2$ $H_1{:}\sigma^2 < \sigma_0^2$	$\dfrac{(n-1)s^2}{\sigma_0^2}$	χ^2_{n-1}	$\dfrac{(n-1)s^2}{\sigma_0^2} \leq \chi^2_{n-1,\alpha}$	Population must be normally distributed.
$H_0{:}\sigma_1^2 = k\sigma_2^2$ $H_1{:}\sigma_1^2 \neq k\sigma_2^2$	$\dfrac{1}{k}\dfrac{s_1^2}{s_2^2}$	F_{n_1-1,n_2-1}	$\dfrac{1}{k}\dfrac{s_1^2}{s_2^2} \leq F_{n_1-1,n_2-1,\alpha/2}$ or $\dfrac{1}{k}\dfrac{s_1^2}{s_2^2} \geq F_{n_1-1,n_2-1,1-(\alpha/2)}$	Population must be normally distributed. Note that $F_{n_1-1,n_2-1,\alpha/2} = 1/F_{n_2-1,n_1-1,1-(\alpha/2)}$.
$H_0{:}\sigma_1^2 \leq k\sigma_2^2$ $H_1{:}\sigma_1^2 > k\sigma_2$	$\dfrac{1}{k}\dfrac{s_1^2}{s_2^2}$	F_{n_1-1,n_2-1}	$\dfrac{1}{k}\dfrac{s_1^2}{s_2^2} \geq F_{n_1-1,n_2-1,1-\alpha}$	Population must be normally distributed.
$H_0{:}\sigma_1^2 \geq k\sigma_2^2$ $H_1{:}\sigma_1^2 < k\sigma_2^2$	$\dfrac{1}{k}\dfrac{s_1^2}{s_2^2}$	F_{n_1-1,n_2-1}	$\dfrac{1}{k}\dfrac{s_1^2}{s_2^2} \leq F_{n_1-1,n_2-1,\alpha}$	Population must be normally distributed.

Hypothesis	Statistic	Dist.	Decision Rule: Reject H_0 if	Note
H_0:$\mu_1 - \mu_2 = d$ H_1:$\mu_1 - \mu_2 \neq d$	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(\sigma_1^2/n_1) + (\sigma_2^2/n_2)}}$	z	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(\sigma_1^2/n_1) + (\sigma_2^2/n_2)}} \leq -z_{1-(\alpha/2)}$ or $\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(\sigma_1^2/n_1) + (\sigma_2^2/n_2)}} \geq z_{1-(\alpha/2)}$	Population normally distributed, σ_1 and σ_2 are known
	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(s_p^2/n_1) + (s_p^2/n_2)}}$	$t_{n_1+n_2-2}$	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(s_p^2/n_1) + (s_p^2/n_2)}} \leq -t_{n_1+n_2-2,1-(\alpha/2)}$ or $\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(s_p^2/n_1) + (s_p^2/n_2)}} \geq t_{n_1+n_2-2,1-(\alpha/2)}$	Population normally distributed, σ_1 and σ_2 are unknown but we know that $\sigma_1 = \sigma_2$. Here $s_p^2 = \frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}$
	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(s_1^2/n_1) + (s_2^2/n_2)}}$	t'	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(s_1^2/n_1) + (s_2^2/n_2)}} \leq -t'_{1-(\alpha/2)}$ or $\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(s_1^2/n_1) + (s_2^2/n_2)}} \geq t'_{1-(\alpha/2)}$	Population normally distributed, σ_1 and σ_2 are unknown but we know that $\sigma_1 \neq \sigma_2$. Here $t'_{1-(\alpha/2)} = \frac{\left(\frac{s_1^2}{n_1}\right) t_{1-(\alpha/2),n_1-1} + \left(\frac{s_2^2}{n_2}\right) t_{1-(\alpha/2),n_2-1}}{\left(\frac{s_1^2}{n_1}\right) + \left(\frac{s_2^2}{n_2}\right)}$.
H_0:$\mu_1 - \mu_2 \leq d$ H_1:$\mu_1 - \mu_2 > d$	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(\sigma_1^2/n_1) + (\sigma_2^2/n_2)}}$	z	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(\sigma_1^2/n_1) + (\sigma_2^2/n_2)}} \geq z_{1-\alpha}$	Population normally distributed, σ_1 and σ_2 are known
	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(s_p^2/n_1) + (s_p^2/n_2)}}$	$t_{n_1+n_2-2}$	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(s_p^2/n_1) + (s_p^2/n_2)}} \geq t_{n_1+n_2-2,1-\alpha}$	Population normally distributed, σ_1 and σ_2 are unknown but we know that $\sigma_1 = \sigma_2$. Here $s_p^2 = \frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}$
	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(s_1^2/n_1) + (s_2^2/n_2)}}$	t'	$\frac{\bar{x}_1 - \bar{x}_2 - d}{\sqrt{(s_1^2/n_1) + (s_2^2/n_2)}} \geq t'_{1-\alpha}$	Population normally distributed, σ_1 and σ_2 are unknown but we know that $\sigma_1 \neq \sigma_2$. Here $t'_{1-\alpha} = \frac{\left(\frac{s_1^2}{n_1}\right) t_{1-\alpha,n_1-1} + \left(\frac{s_2^2}{n_2}\right) t_{1-\alpha,n_2-1}}{\left(\frac{s_1^2}{n_1}\right) + \left(\frac{s_2^2}{n_2}\right)}$.
H_0:$\mu_1 - \mu_2 \geq d$ H_1:$\mu_1 - \mu_2 < d$	Similar to the row above			