Case 1: One Variable (Population)

Assumptions	σ is known	σ is unknown	$n(p_0) > 5$ and $n(1-p_0) > 5$
Parameter of interest:	Mean, μ	Mean, μ	Proportion, p
Confidence Interval Formula:	$\bar{x} \pm z(\alpha/2)\frac{\sigma}{\sqrt{n}}$	$\bar{x} \pm t(df, \alpha/2)\frac{s}{\sqrt{n}}$ with $df = n-1$	$p' \pm z(\alpha/2)\sqrt{\frac{p'q'}{n}}$
Name of Hypothesis Test, H_0	One sample z-test, $H_0: \mu = \mu_0$	One sample t-test, $H_0: \mu = \mu_0$	One sample test of proportion$H_0: p = p_0$
Test Statistic Formula:	$z^* = \frac{\bar{x} - \mu_0}{\sigma/\sqrt{n}}$	$t^* = \frac{\bar{x} - \mu_0}{s/\sqrt{n}}$ with $df = n-1$	$z^* = \frac{p' - p_0}{\sqrt{\frac{p_0 q_0}{n}}}$
p-value:	$H_a: \mu > \mu_0$, p-value=$P(z \geq z^*)$ $H_a: \mu < \mu_0$, p-value=$P(z \leq z^*)$ $H_a: \mu \neq \mu_0$, p-value=$2 \times P(z \geq \lvert z^* \rvert)$	$H_a: \mu > \mu_0$, p-value=$P(t(df) \geq t^*)$ $H_a: \mu < \mu_0$, p-value=$P(t(df) \leq t^*)$ $H_a: \mu \neq \mu_0$, p-value=$2 \times P(t(df) \geq \lvert t^* \rvert)$	$H_a: p > p_0$, p-value=$P(z \geq z^*)$ $H_a: p < p_0$, p-value=$P(z \leq z^*)$ $H_a: p \neq p_0$, p-value=$2 \times P(z \geq \lvert z^* \rvert)$