

### Formulate the Hypothesis

Null Hypothesis H0	hypothesis that is being tested (and trying to be disproved)
Alternate Hypothesis H1	represents the alternative value

### Hypothesis Testing for Mean of 1-Sample

one sample t-test ( $\mu_0$ (given) is population mean; $\mu$ is computed sample mean)	H0 : $\mu = \mu_0$ , H1 : $\mu \neq \mu_0$	<code>t.test(sample_vector , mu=population_mean, alternative="two.sided")</code>	Compare p-value with $\alpha$ to check if H0 is rejected or not; Check test-statistic z if H0 is true;
test for proportion (p (given) is population mean; $\mu$ is computed sample mean)	H0 : $\mu = p$ , H1 : $\mu \neq p$	<code>prop.test(true_proportion, n_proportion, p=population_mean, alternative = "less")</code>	Compare p-value with $\alpha$ to check if H0 is rejected or not; Check test-statistic z if H0 is true;

### Test for Normality

Quantile Plot		<code>qqPlot-(vector)</code>	Check curve of qqplot
Shapiro-Wilks test	H0 : $x = N(\mu, \sigma)$ and H1 : $x \neq N(\mu, \sigma)$	<code>shapiro.test</code>	Check p-value obtained from the test is $< 0.05$ then we reject H0 and assume the data is not normally distributed.

### Comparing Variances

Fisher's F test	H0: the variances are the same; H1: they are different	<code>var.test(vectorA, vectorB)</code>	Check p-value; Check ratio if H0 is true.
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