Section 8.1 → Intro to Hypothesis Testing, Tests for Significance

Parameter to be examined	Population Proportion → p	Population Mean → μ
Corresponding statistical estimate	Sample Proportion $\hat{p} = \frac{x}{n}$	Sample Mean $\bar{x} = \frac{\sum x}{n}$
Standard error	$\sigma_{\hat{p}} = \sqrt{\frac{pq}{n}}$	$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}}$
Criteria for appx. normality	$np \geq 10$ & $nq \geq 10$ Use actual number of successes & failures at least 10 if p & q are unknown.	$n > 30$ or the population is normal.
Mean of statistic	$\mu_{\hat{p}} = p$. ($\hat{p}$ unbiased)	$\mu_{\bar{x}} = \mu$ ($\bar{x}$ is unbiased)
z-score aka. "Test Statistic"	T.S.: $z = \frac{\hat{p} - p}{\sqrt{\frac{pq}{n}}}$	T.S.: $z = \frac{\bar{x} - \mu}{\sigma/\sqrt{n}}$
p-value	3 Types of p values ... → Right tailed → Left tailed → 2-tailed	Conclusions: If the p-value is small (less than a "level of significance"), then a significant change or difference has occurred.
Critical Value →	The required number of standard deviations for significance.	