A Brief Summary

Dist'n	One-Sample Inference	Two-Sample Inference
Normal	$H_0 : \mu = \mu_0$	Paired $H_0 : \mu_D = 0$, CI for μ_D (Z or T_{n-1})
	CI for μ	2 ind samples $H_0 : \mu_1 = \mu_2$, CI for $\mu_1 - \mu_2$ ($T_{n_1+n_2-2}$)
	σ^2 is known (Z) or unknown (T_{n-1})	k ind samples $H_0 : \mu_1 = \mu_2 = \cdots = \mu_k$ ($F_{k-1,N-k}$)
	$H_0 : \sigma^2 = \sigma_0^2$, CI for σ^2 (χ^2_{n-1})	$H_0 : \sigma^2 = \sigma_0^2$, CI for σ^2 (χ^2_{N-k})
Arbitrary	$H_0 : \mu = \mu_0$, CI for μ (CLT Z)	Paired $H_0 : \mu = \mu_0$ (Signed rank)
		2 ind samples $H_0 : \mu_1 = \mu_2$ (Mann-Whitney)
		2 ind samples $H_0 : \sigma_1^2 = \sigma_2^2$ (Levene's)
Binomial	$H_0 : p = p_0$ (Binomial $Y \sim B(n,p)$)	
	$H_0 : p = p_0$, CI for p (CLT Z)	2 ind samples $H_0 : p_1 = p_2$, CI for $p_1 - p_2$ (CLT Z)

Notes: For testing or CI, address model assumptions (e.g. distribution, independence, equal variance) via detection, correction, and robustness.

Notes on testing: H_0, H_A (1-sided or 2-sided), test statistic and its distribution, p-value, interpretation, rejection region, α, β, power, sample size determination.

Notes on paired t-test: The assumptions are $D \sim$ iid $N(\mu_D, \sigma_D^2)$ where $D = Y_1 - Y_2$. Y_1, Y_2 need not be normal. Y_1 and Y_2 need not be independent.