Sampling distribution summary table

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①	$\frac{\bar{X}-\mu}{\sigma/\sqrt{n}}$ (population S.D. is known)	z distribution	• for all n if the original population is normally distributed • otherwise $n \geq 30$
②	$\frac{\bar{X}-\mu}{S/\sqrt{n}}$ (population S.D. is unknown)	t distribution with $(n-1)$ degrees of freedom	"
③	$\frac{\hat{p}-p}{\sqrt{\frac{pq}{n}}}$ $q = 1-p$	z distribution	"
④	$\frac{(n-1)S^2}{\sigma^2}$	Chi square distribution with $(n-1)$ dof	"
⑤	$\frac{(\bar{X}_1-\bar{X}_2)-(\mu_1-\mu_2)}{\sqrt{\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}}}$	z distribution	• valid for all n_1 & n_2 if original populations are normally distributed otherwise $n_1 \geq 30$ & $n_2 \geq 30$
⑥	$\frac{\sigma_2^2 S_1^2}{\sigma_1^2 S_2^2}$	F distribution with (n_1-1, n_2-1) dof	"