confidence limits (about the mean)
Symmetric confidence limits ($\pm C$) about the estimated mean, which cover the population mean with probability $1 - \alpha$. The quantity C is calculated by the formula:

$$C = t_{p,\nu} s/\sqrt{n}$$

Here $t_{p,\nu}$ is the critical value from the t- (or Student) distribution function corresponding to the confidence level $1 - \alpha$ and degrees of freedom ν. The symbol p represents the percentile (or percentage point) of the t-distribution. For 1-sided intervals, $p = 1 - \alpha$; for 2-sided intervals, $p = 1 - \alpha/2$. In each case, the confidence level is $1 - \alpha$. The confidence interval is given as $\bar{x} \pm C$.
Comment:
If the population standard deviation σ is known, confidence limits about a single result may be calculated with the formula:

$$C = t_{p,\infty}\sigma$$

The coefficient $t_{p,\infty}$ is the limiting value of the t-distribution function for $\nu = \infty$ at confidence level $1 - \alpha$. This is identical to z_p, the pth percentage point of the standard normal variate.
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