CHEATSHEET FOR THE MEAN AND VARIANCE OF POPULATION AND SAMPLES.

Let N be the size of the population, and n that of the sample.

	Population parameter	**Sample** statistic
mean	$\mu = \frac{\sum_{i=1}^{N} x_i}{N}$	$\bar{\mathrm{x}} = \frac{\sum_{i=1}^{n} x_i}{n}$
variance	$\sigma^2 = \frac{\sum_{i=1}^{N} (x_i - \mu)^2}{N}$	$s_{n-1}^2 = \frac{\sum_{i=1}^{n} (x_i - \bar{\mathrm{x}})^2}{n-1}$

True standard deviation of the sample mean
Let σ be the standard deviation of the population:

$$SD_{\bar{\mathrm{x}}} = \frac{\sigma}{\sqrt{n}}$$

Standard error of the mean
Let s be the sample standard deviation:

$$SEM_{\bar{\mathrm{x}}} = \frac{s}{\sqrt{n}}$$