How to know if $\sigma$ known or unknown:

$\sigma$ known

- The population variance $\ldots \ldots (\sigma^2)$
- The population standard deviation $\ldots \ldots (\sigma)$
- It is normal distribution with variance $\ldots (\sigma^2)$
- It is normal distribution with standard deviation $\ldots (\sigma)$

$\sigma$ unknown: (Use $S$ instead)

- Sample variance $\ldots (S^2)$
- Sample standard deviation $\ldots (S)$
- If we have a sample of size $\ldots (n)$, has mean ($\bar{X}$) with variance $\ldots (S^2)$
- If we have a sample of size $\ldots (n)$, has mean ($\bar{X}$) with standard deviation $\ldots (S)$

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