* A **point estimator** is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that provides \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a population \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Ideally, a point estimate is our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at the value of an unknown parameter.
* **an ideal point estimator： \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **Confidence interval**

95% of intervals [, ] will include the true mean.

* **Confidence interval** for a population characteristic is an interval of plausible values for the characteristic.
* Degree of confidence
* **FRQ:** We are C% confident that the interval from xxxxxx to xxxxxx captures the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the [population parameter in context]

|  |  |  |
| --- | --- | --- |
| parameter | p |  |
| Point estimator |  |  |
| Confidence interval |  |  |

* + What is the 90% confidence interval?

90% of sample means will fall into the interval \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* + Construct a CI

For example, a 90% confidence interval for with sample size n is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Generally, the confidence interval is:

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** ± **\_\_\_\_\_­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ • (standard deviation of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)**

**Critical value：**

**Margin of error (ME):**

* + Properties of Confidence Intervals:
    - The user chooses the confidence level, and the margin of error follows from this choice.
    - The critical value depends on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the sampling distribution of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Greater confidence requires a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ critical value
  + The standard deviation of the statistic depends on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Conditions of Using Confidence Intervals

1. Random
2. Normal
3. 10% condition



