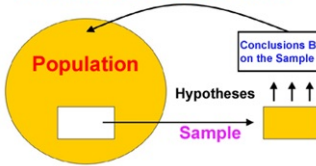


## Goals

This week: Topic 3: Statistical inference

Sample means:

### Statistical Inference



Source: <https://goo.gl/MMi7Qc>

"The **t distribution** (aka, **Student's t-distribution**) is a probability distribution that is used to estimate population parameters when the sample size is small and/or when the population variance is unknown."

$$t = \frac{\bar{X} - \mu}{\frac{s}{\sqrt{N}}}$$

## Theoretical Components

Read the notes and study the examples.  
(Classroom/ABOUT/Resources/S2/Term4/WK14)

Student's t Distribution:

<https://goo.gl/H0SYDi>

CAS CP400:

Sampling Dist of Sample Mean:

<https://youtu.be/moj-2A6lGRc>

Inverse Normal Prob:

<https://youtu.be/YSzXuI0fFYQ>

Confidence Interval:

[https://youtu.be/hdNo60cw\\_9U](https://youtu.be/hdNo60cw_9U)

<https://youtu.be/UQuib2hbgMY>

## Practical Components

Check GoogleDrive/S2/Term4/WK14 folder:

- Attempt as many questions.

## Investigation

WK14:

The weights of packages received by a department store have a mean of 300 N and a standard deviation of 50 N. What is the probability that 25 packages received at random and loaded on an elevator will exceed the specified safety limit of the elevator, listed as 8200 N?

5 marks.

WK15: None.

QFO

Quiz/Forum/Other

Keep checking G/Classroom for more resources.