

[See this page in the course material.](#)

The image shows a chalkboard with handwritten mathematical derivations. The main expression being simplified is:

$$= \frac{\frac{n}{2(\frac{t_p^2}{n} + 1)}}{\frac{n}{2(\frac{t_p^2}{n} + 1)}} \left(2w + \frac{t_p^2}{n} \pm \sqrt{4t_p^2 \frac{w(1-w)}{n} + \left(\frac{t_p^2}{n}\right)^2} \right)$$

Below this, the expression is simplified as $n \rightarrow \infty$:

$$\frac{1}{2} \xrightarrow{n \rightarrow \infty} \frac{1}{2} \left(2w \pm \sqrt{4t_p^2 \frac{w(1-w)}{n}} \right) = w$$

Other visible equations include:

$$P(|w - p| < t_p \sqrt{\frac{P(1-P)}{n}}) = P$$
$$(w - p)^2 < t_p^2 \frac{P(1-P)}{n}$$
$$w^2 - 2wp + p^2 < \frac{t_p^2}{n} P(1-P)$$

We learn more by looking for the answer to a question and not finding it than we do from learning the answer itself.

—Lloyd Alexander, author

Learning Objectives

By the end of this section, you will be able to:

- Recognize strategies that engage active learning in the classroom
- Identify strategies to engage active learning outside the classroom

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