

Goal:

Develop standards we can use to judge whether a ratio of two measurements is close enough to a ratio we're interested in (like $\sqrt{2}$) to warrant further investigation.

In other words, **How Close Is Close Enough??**

How Close is Close Enough – Preliminary Ideas to take into account

- ▶ Measurements of real objects will *always* be approximations.
 - ▶ Surfaces of real objects are not perfectly flat.
 - ▶ Edges are not always well-defined.
 - ▶ Measuring instruments themselves can not be guaranteed to be perfectly accurate.
 - ▶ So **actual lengths** are unknowable
- ▶ When investigating a theory where accuracy matters, should specify precision of measurements by giving a **margin of error**.
- ▶ **Example:**
 - ▶ **Don't say:** "I found this painting to be 20" wide".
 - ▶ **Do say** "this painting was 20" wide ± 1 "."