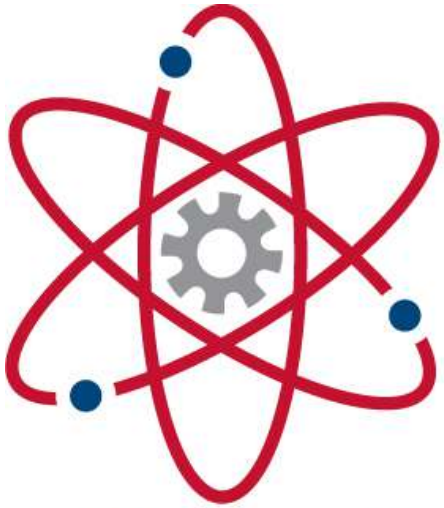


PROJECT LEAD THE WAY

PLTW

Igniting imagination and innovation through learning.

Line Conventions

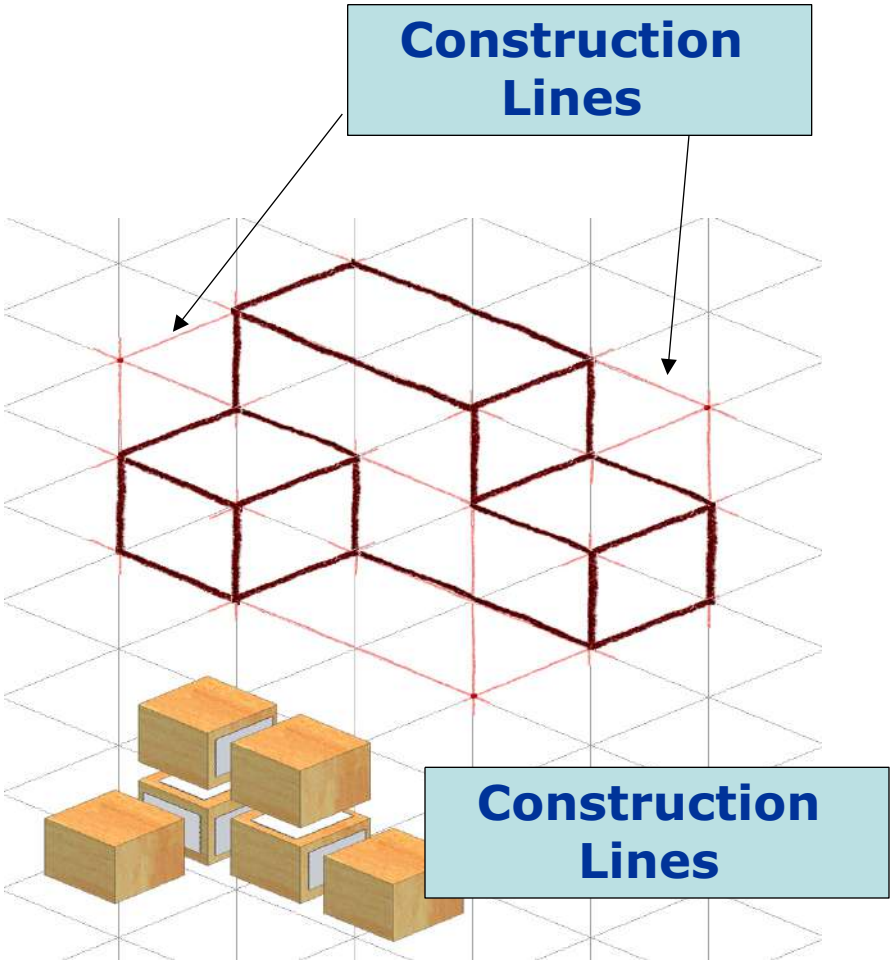
Line Conventions

Lines of varying styles and line weights are used in specific ways to develop and communicate graphic messages about an object's geometry. The next few slides show some basic line conventions and their use.

Line Weight – the thickness (darkness) of line

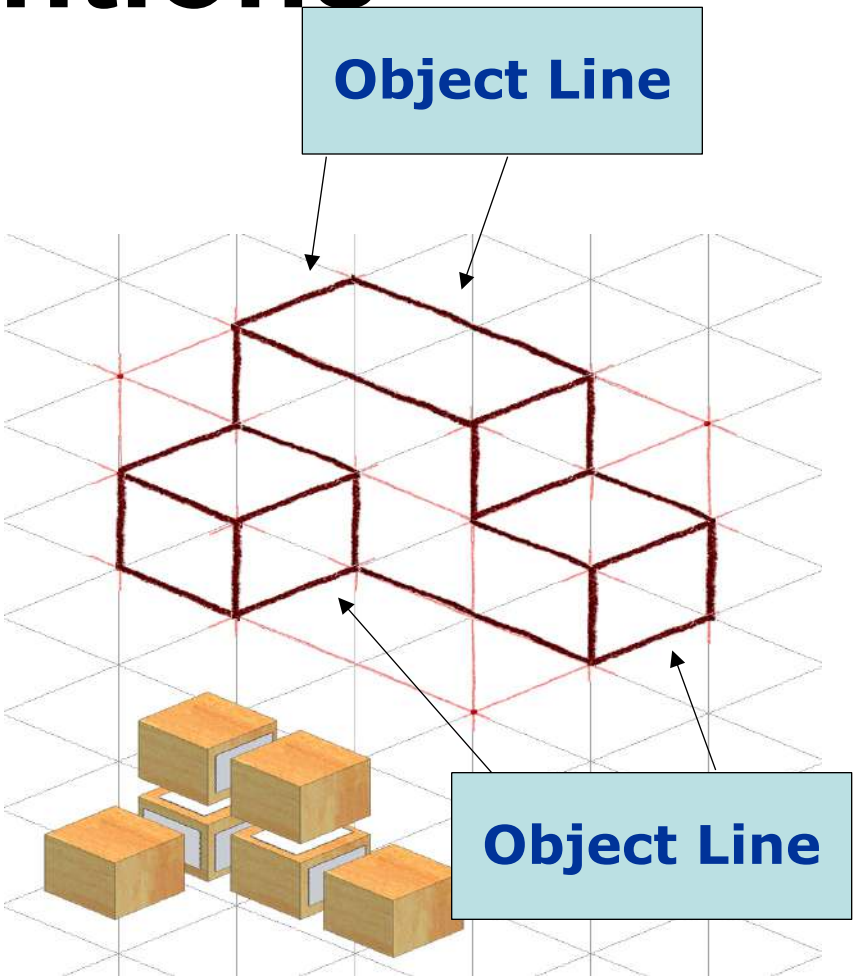
Line Conventions

Construction Line: Very lightly drawn lines used as guides to help draw all other lines and shapes properly.



Line Conventions

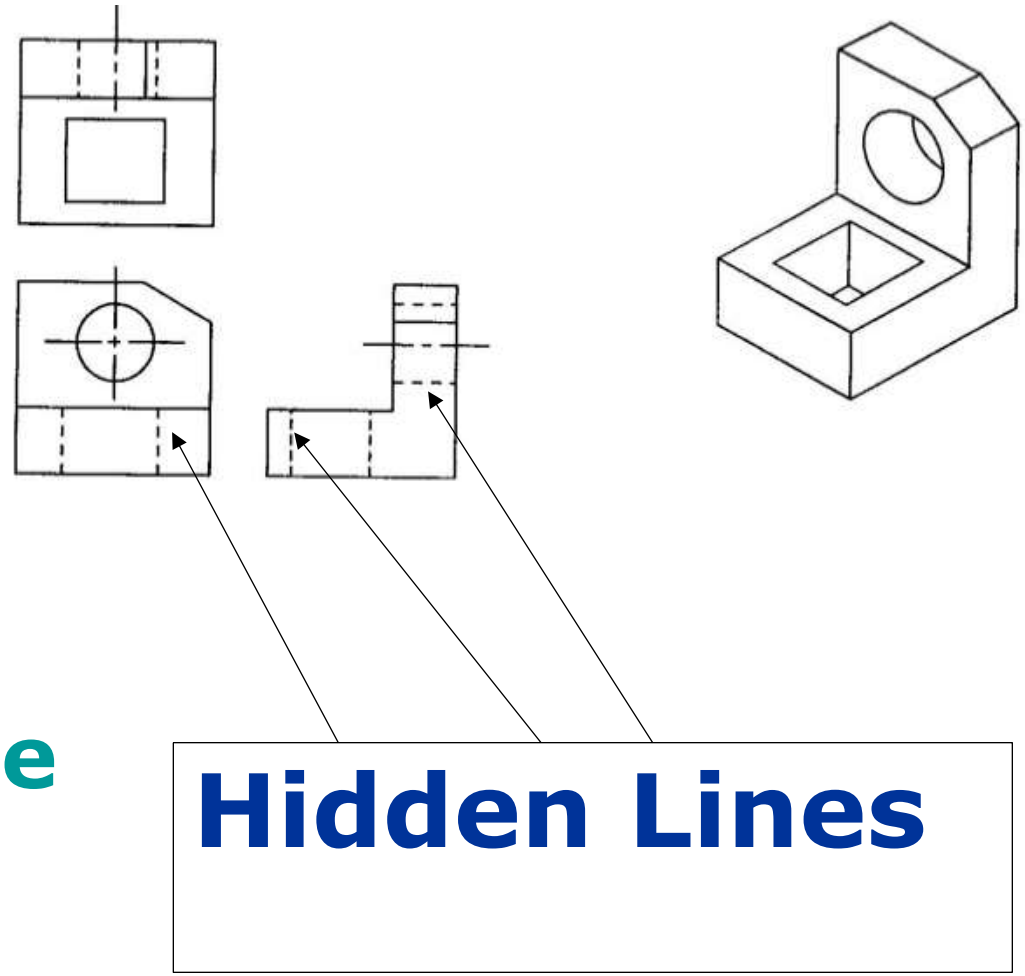
Object Lines: Lines are thick and dark; used to define the object



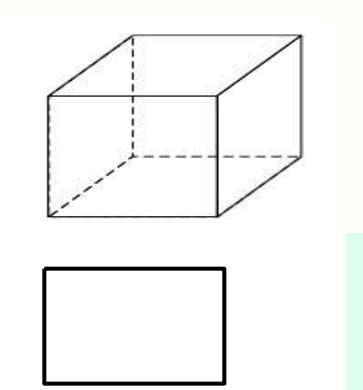
Stop here

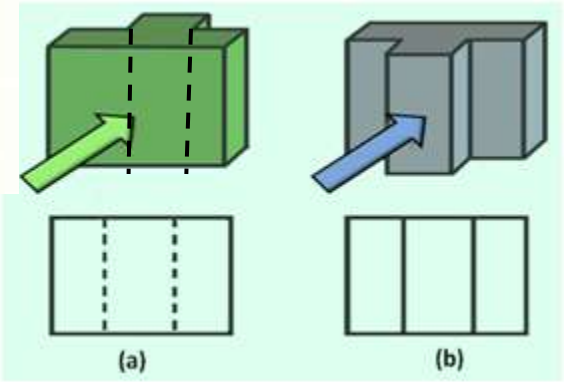
Line Conventions

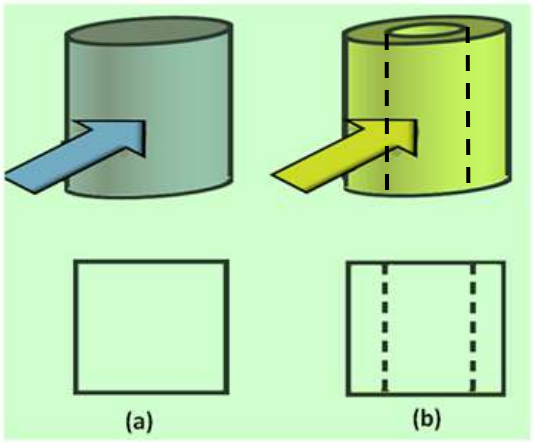
Hidden Line: Lines used to show interior detail that is not visible from the current outside view of the part.

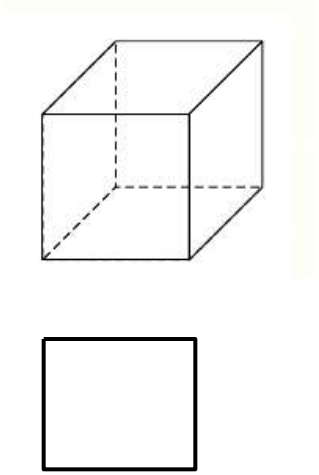


Hidden Lines







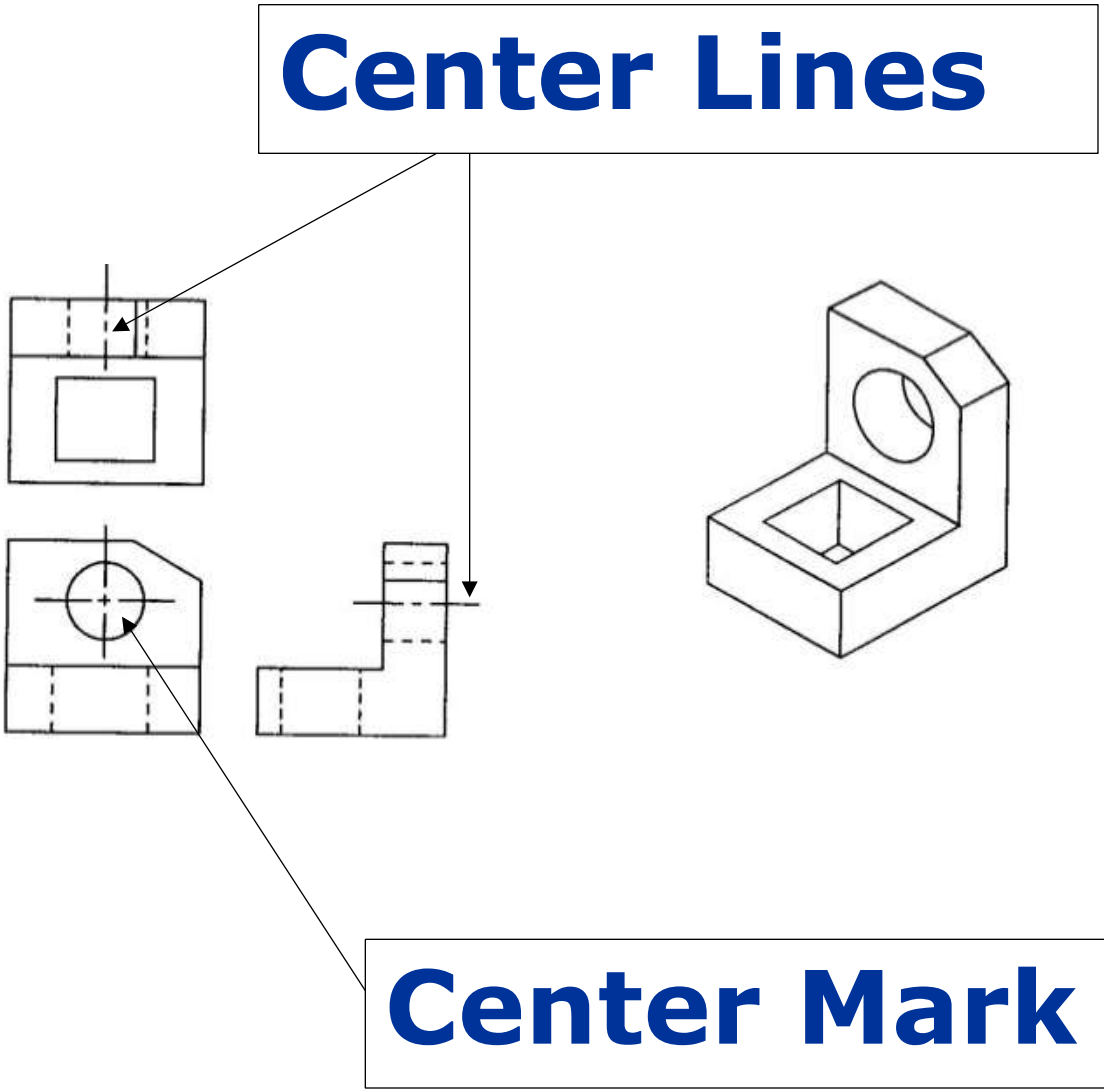


Stop Here

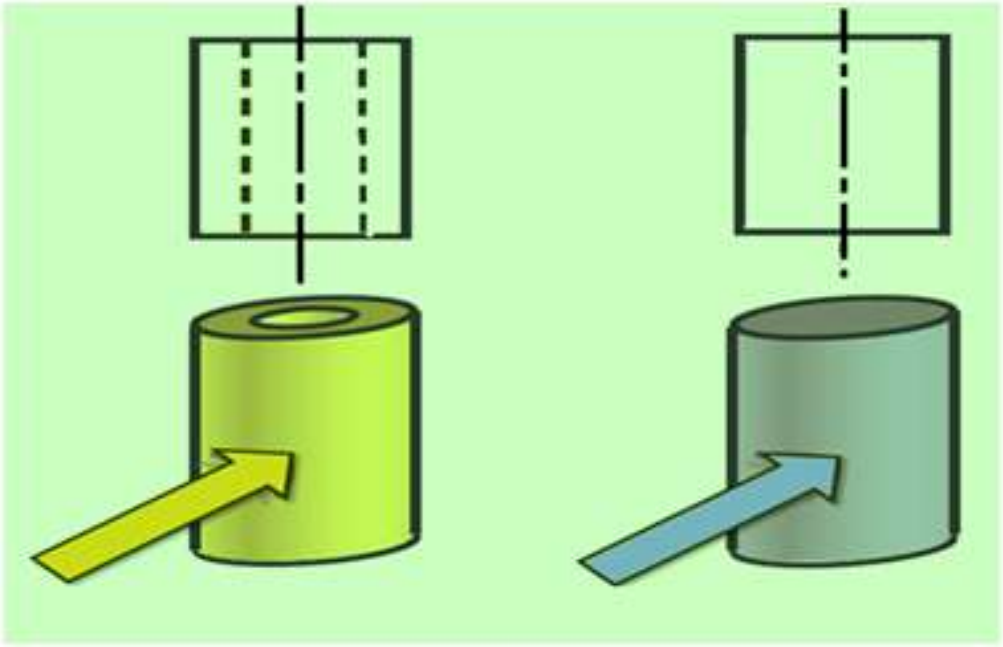
Line Conventions

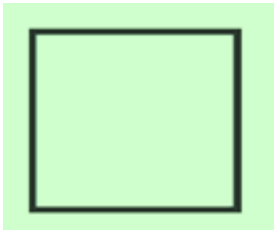
Centerline and Center Marks:
Lines that define the center of arcs, circles, or Symmetrical parts. They are half as thick as an object line.

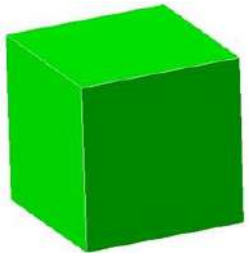
Light weight lines



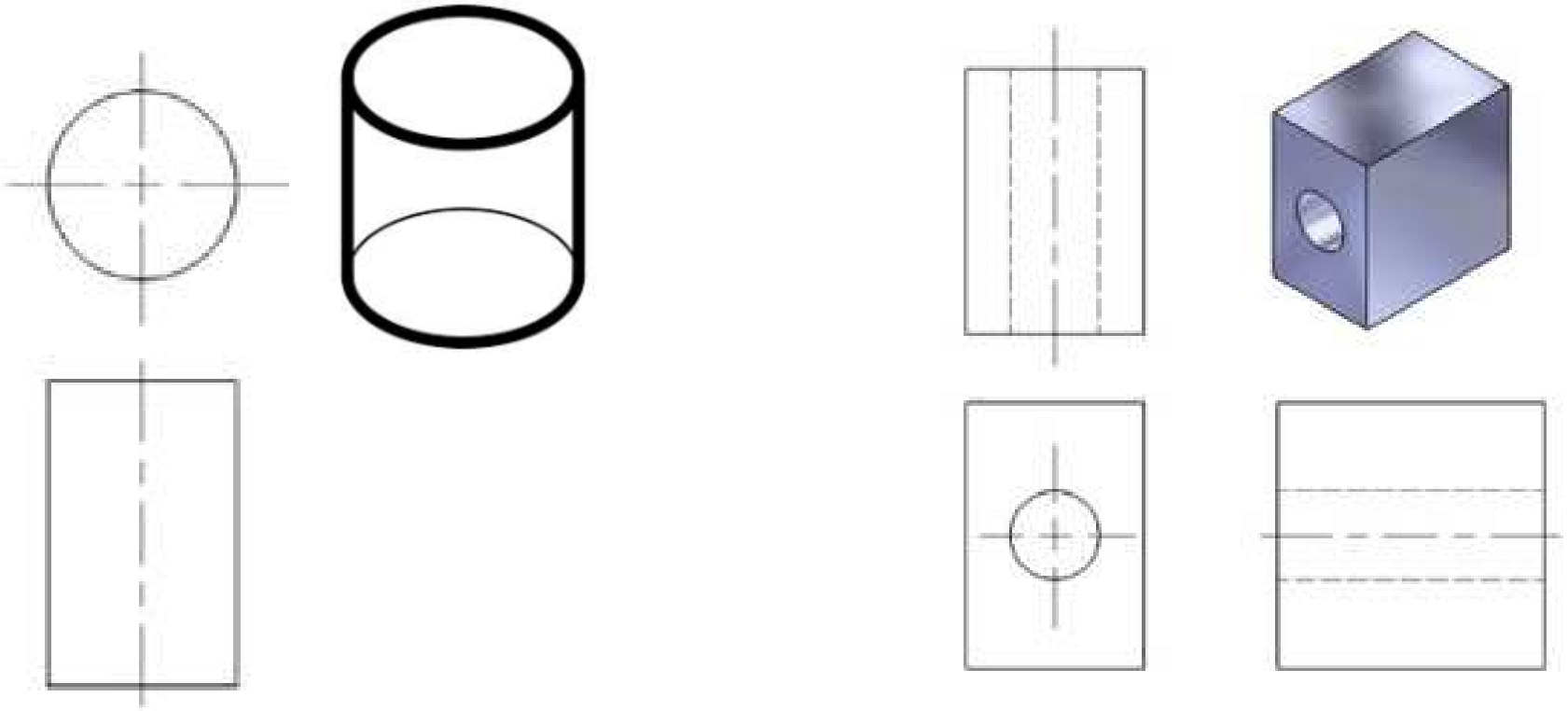
Center Lines







Center lines



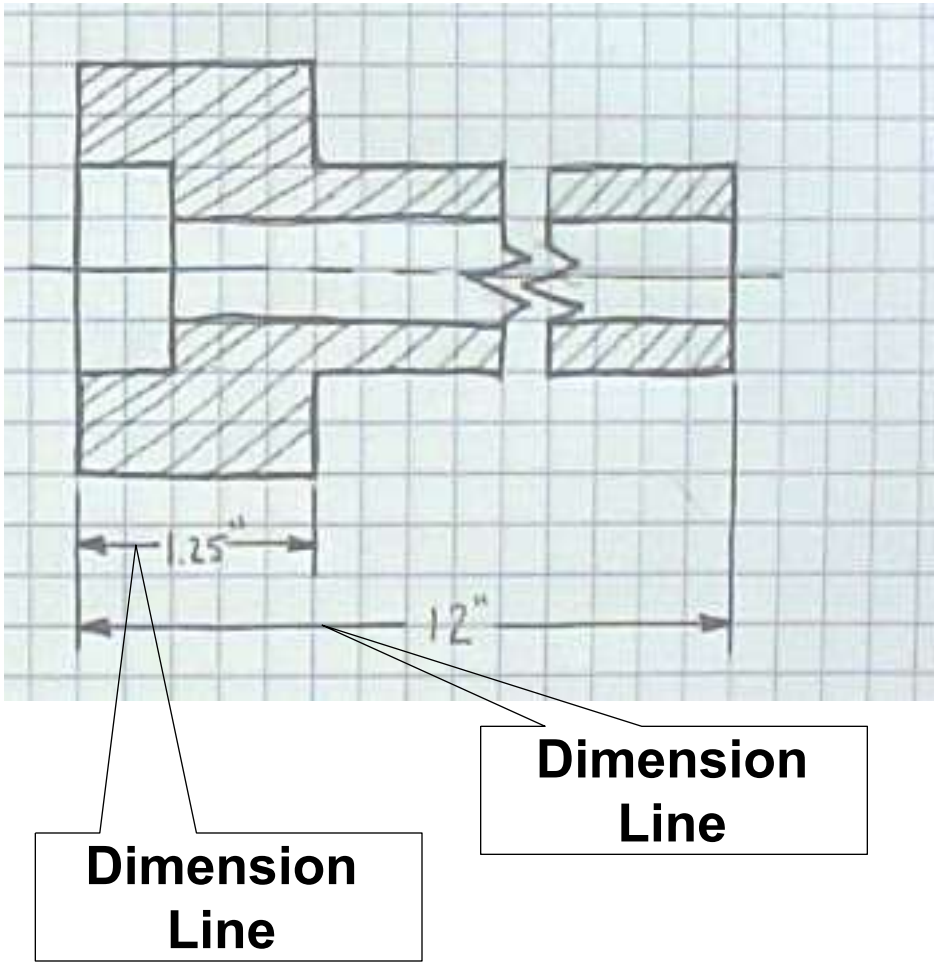
Line Conventions

Dimension Lines: Lines that are used to show distance.

Arrows are drawn on the ends to show where the dimension line starts and ends.

The actual distance is usually located in the middle of the line to let you know the distance being communicated.

Light weight lines



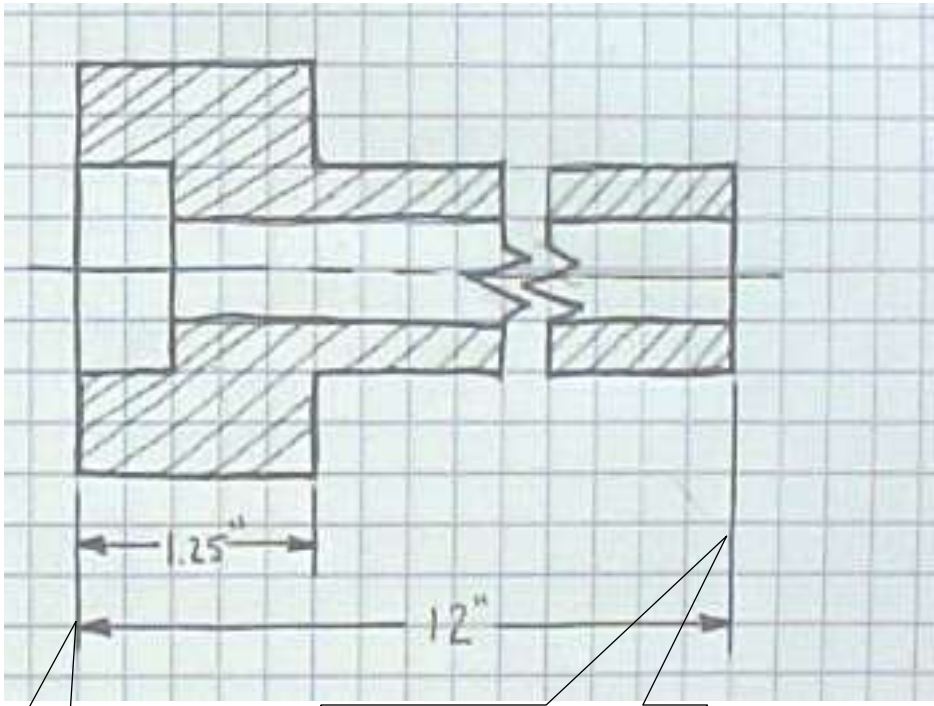
Line Conventions

Extension Lines: Lines used to show where a dimension starts and stops on an object.

Used with dimension lines to properly dimension an object.

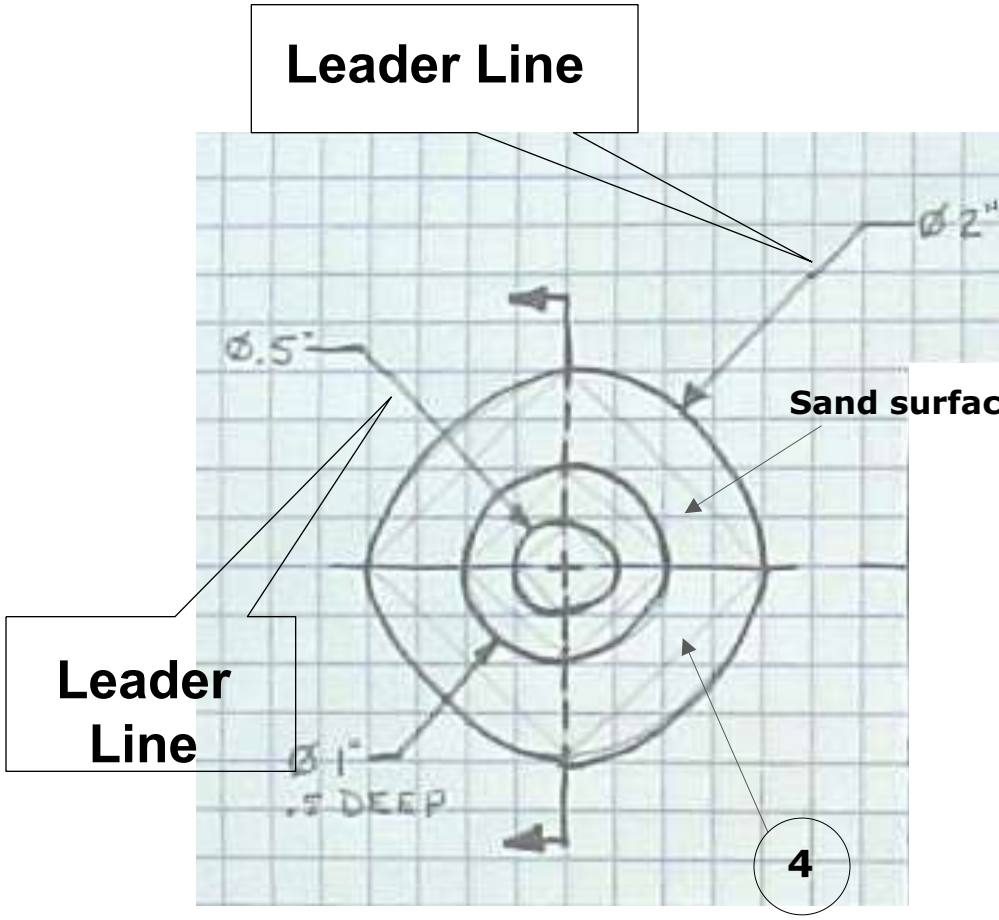
The line is 1/16” away from the part as to not get confused with the object lines.

Light lines

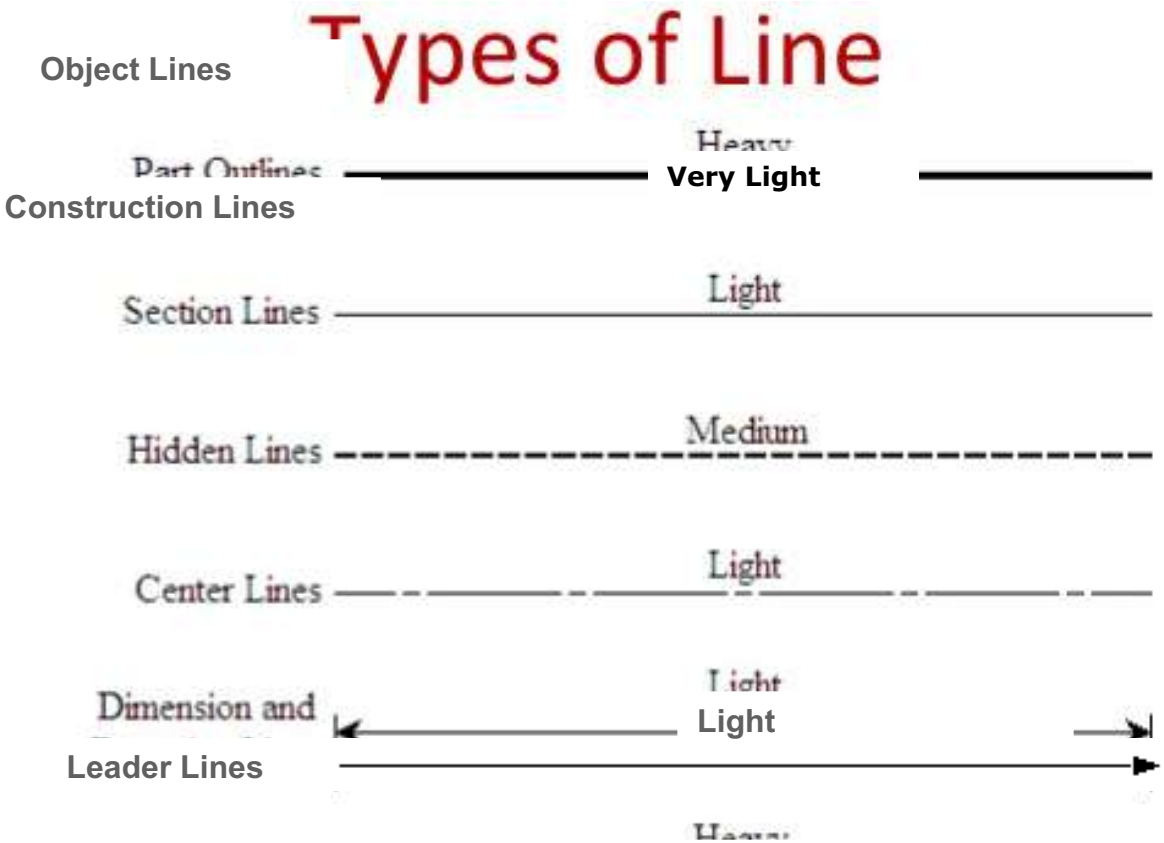


Line Conventions

- **Leader Lines:** Line used to connect a feature of a drawing to some information about that feature.
- The leader line might point to a feature that is a point, a line, a surface, a circle, arc, or even the whole part
- On the other end of the leader line there will be information regarding the dimension, a note or an item number.
- A leader line says, “Look here and read this!!!”
- Don’t want to write the information in the drawing so use a leader line.
- Light lines



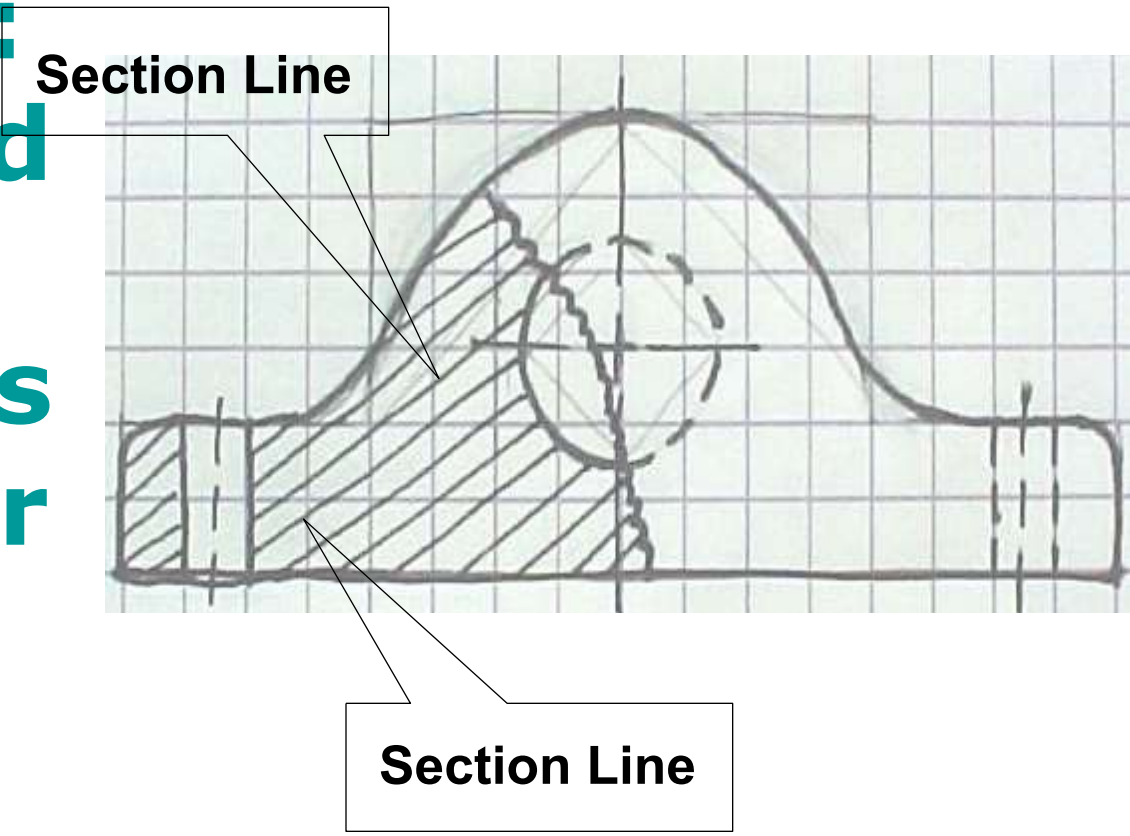
Types of Line



STOP HERE FOR THE CHAPTER

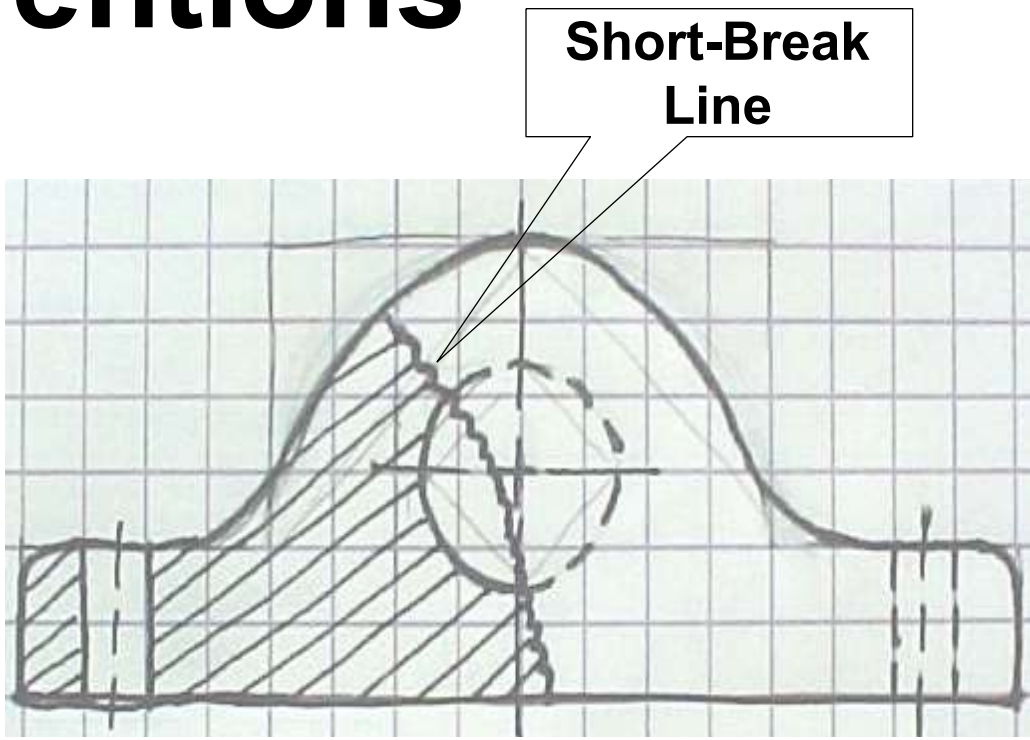
Line Conventions

Section Lines: Lines are used to define where there is material after a part of the object is cut away.



Line Conventions

Short-Break Line:
A freehand drawn line that shows where a part is broken to reveal detail behind the part or to shorten a long continuous part.

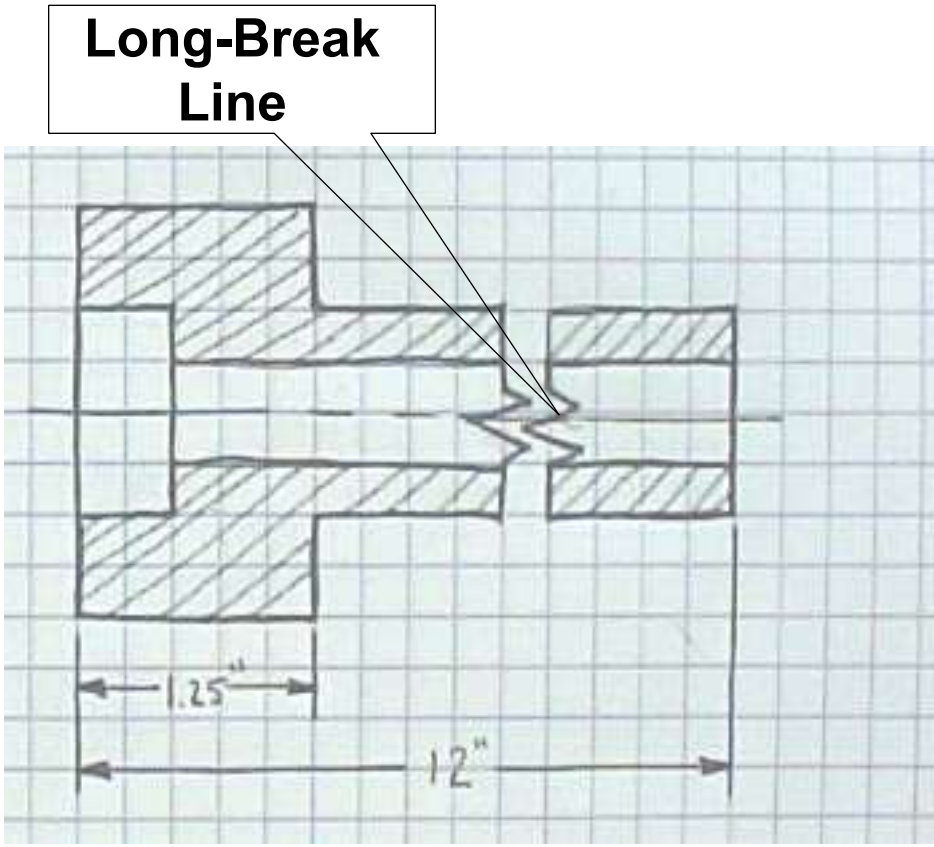


Line Conventions

Long-Break Lines:

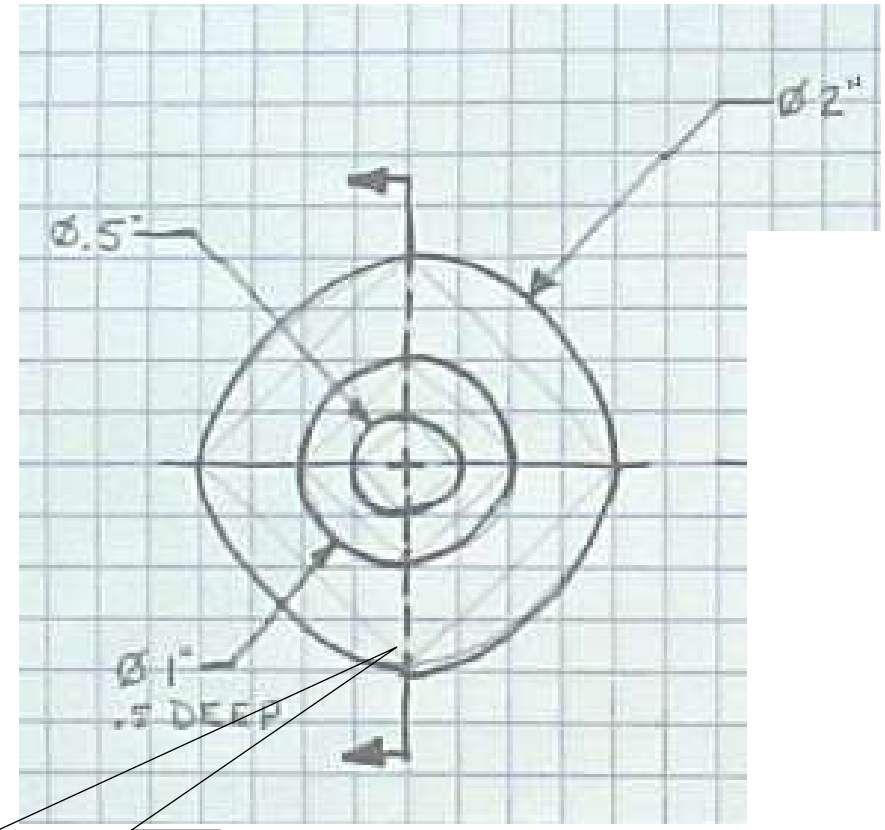
- **Used to shorten very long objects that do not change in detail.**

The line is usually represented as a jagged cut or break.



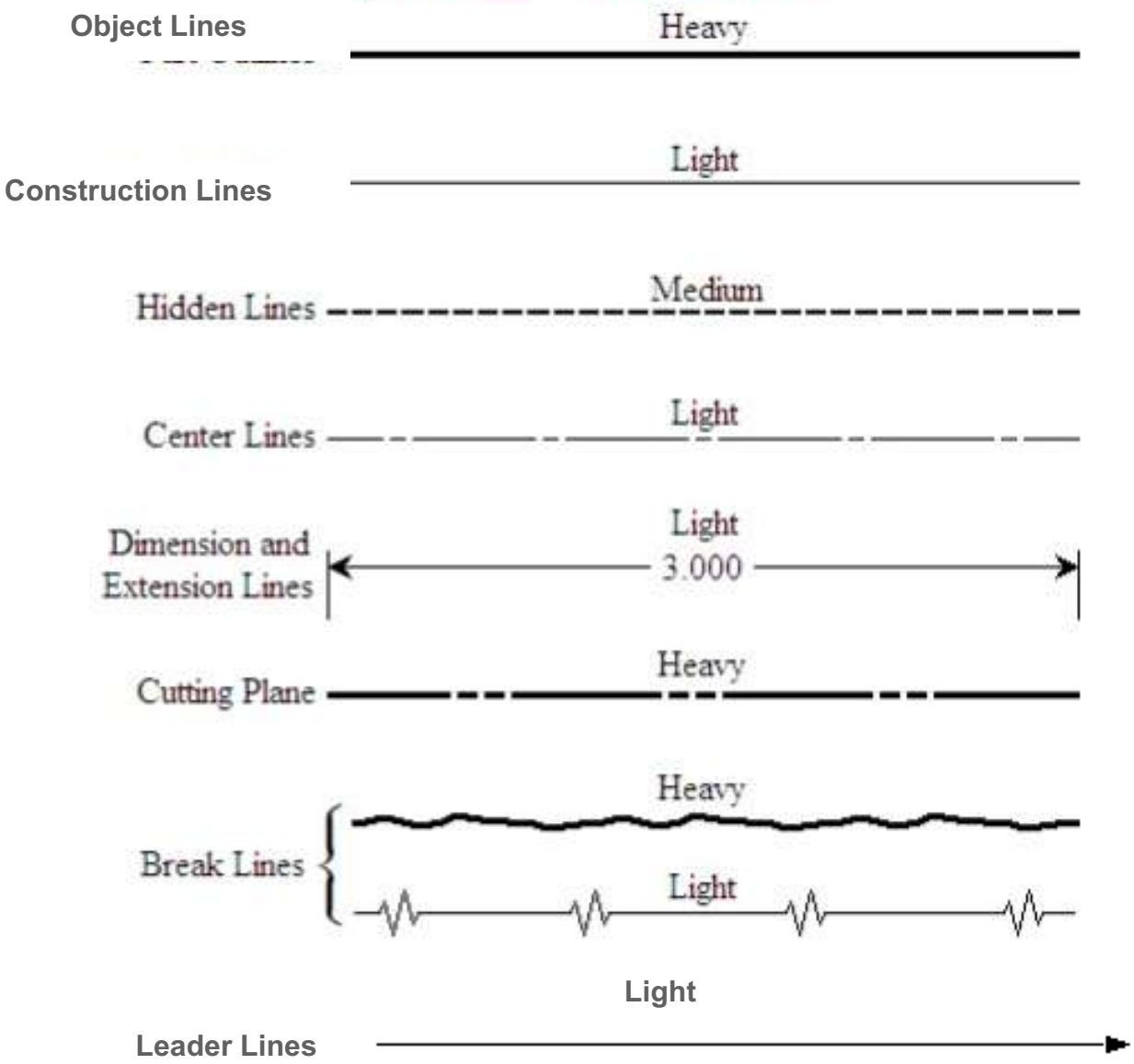
Line Conventions

- **Cutting Plane Line:** is the plane that cuts through a component to create a sectional view showing the internal details that cannot be seen from the outside



Cutting Plane Line

Types of Line



Line Conventions

Though these standards relate to technical drawing, which is far more precise than freehand sketching, their conventions should be used as a guide when sketching.

Precedence of Lines

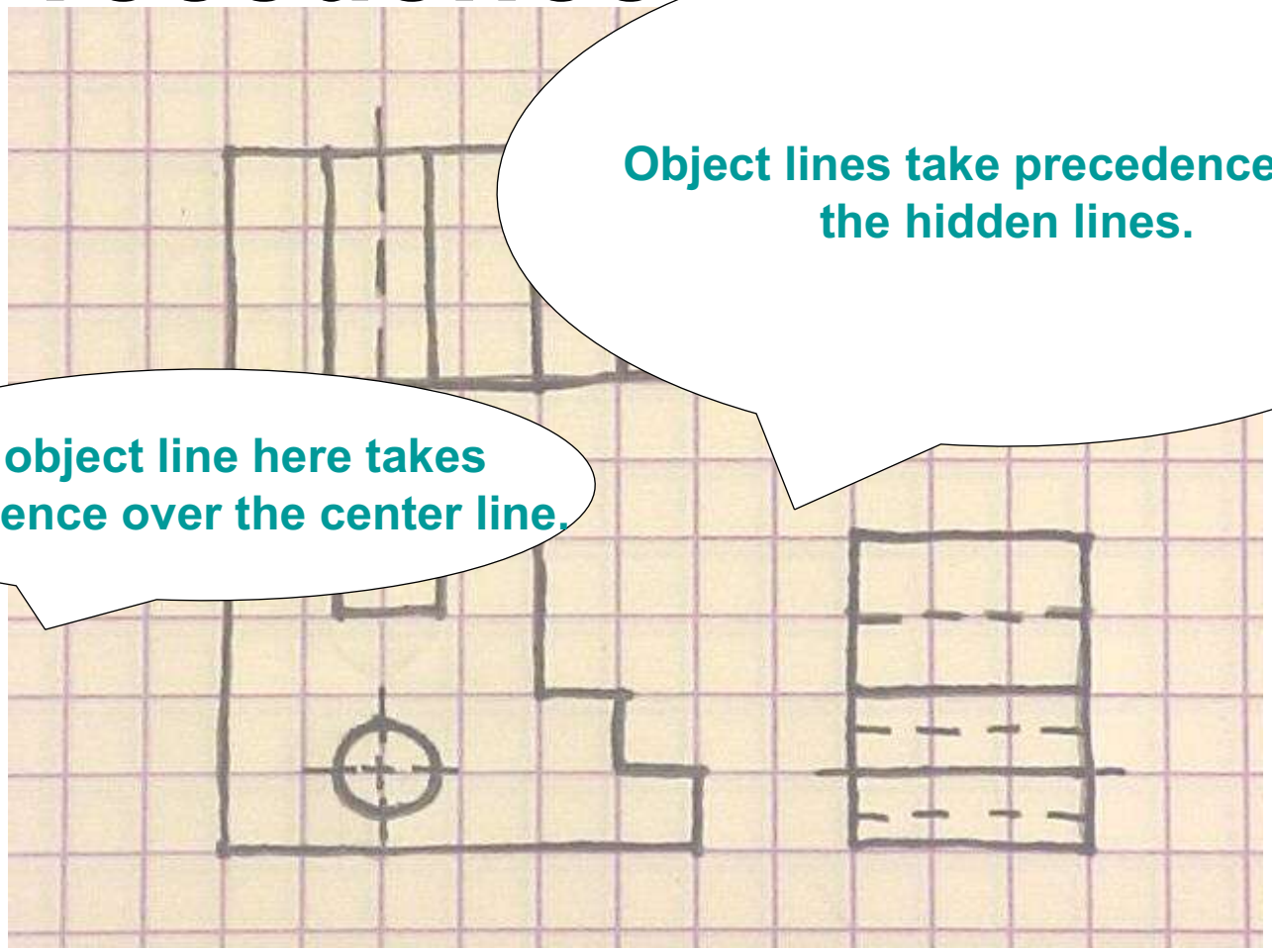
When sketching complex objects, different line types will often overlap each other. Therefore, **line precedence** must be exercised.

Precedence of Lines

The following are rules that govern line precedence in sketches and technical drawings.

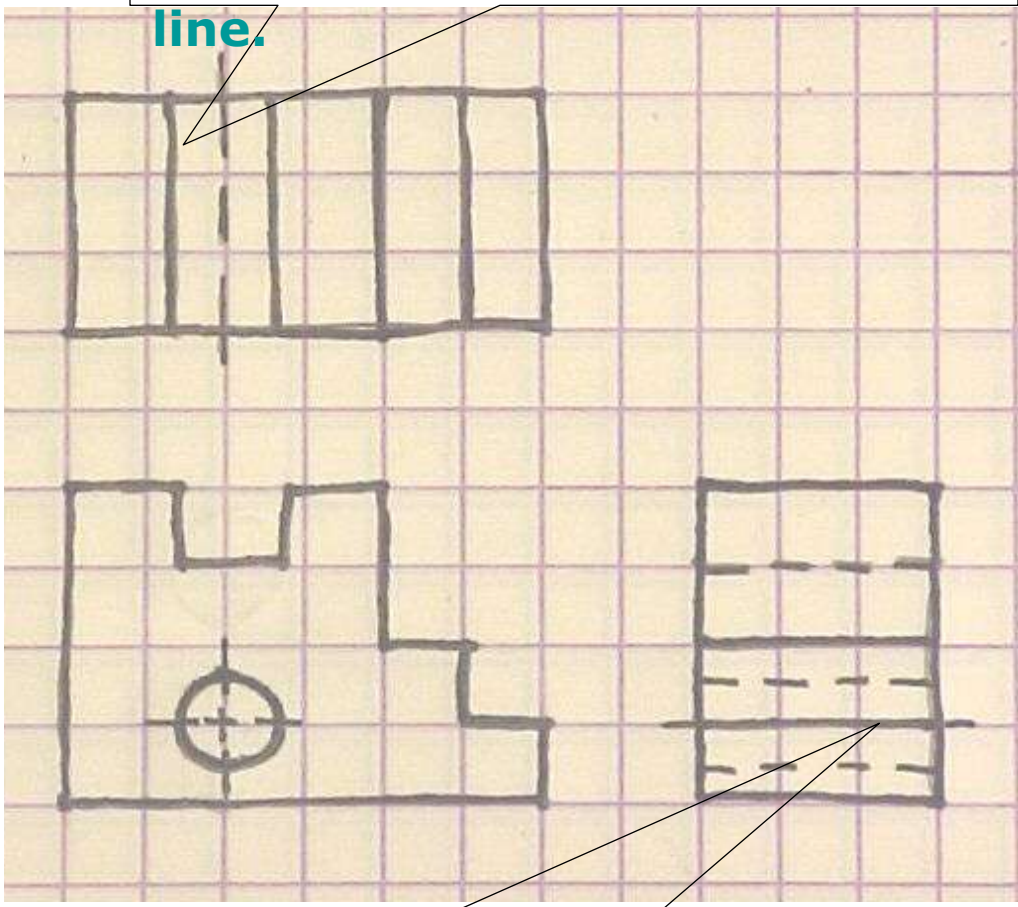
- Object lines take precedence over hidden and center lines.
- Hidden lines take precedence over center lines.
- Cutting plane lines take precedence over all others.

Precedence of Lines



Object lines take precedence over the hidden lines.

An object line here takes precedence over the center line.

Precedence of Lines

- Object lines take precedence over the center lines you would see from the hole.
- Object lines take precedence over the hidden lines you would see from the slot cut out in top view.