

Common Differences Between AutoCAD Tools (2 each)

1. Line vs Polyline

1. Line → Each segment is separate.
Polyline → All segments act as one object.
2. Line → Only straight lines.
Polyline → Can include both lines and arcs.

2. Trim vs Extend

1. Trim → Cuts objects to meet edges.
Extend → Lengthens objects to meet edges.
2. Trim → Shortens geometry.
Extend → Increases geometry.

3. Erase vs Explode

1. Erase → Deletes objects.
Explode → Breaks blocks/polylines into parts.
2. Erase → Removes from drawing.
Explode → Keeps all entities, just separates.

4. Copy vs Mirror

1. Copy → Creates identical duplicates.
Mirror → Creates reversed (flipped) duplicates.
2. Copy → Orientation remains same.
Mirror → Orientation changes across axis.

5. Move vs Copy

1. Move → Relocates objects.
Copy → Duplicates objects.
2. Move → One instance remains.
Copy → Multiple instances exist.

6. Array vs Offset

1. Array → Creates multiple copies in a pattern.
Offset → Creates one copy at fixed distance.
2. Array → Rectangular/Polar arrangement.
Offset → Parallel to original only.

7. Fillet vs Chamfer

1. Fillet → Rounds corners (arc).
Chamfer → Bevels corners (straight).
2. Fillet → Defined by radius.
Chamfer → Defined by distance/angle.

8. Join vs Group

1. Join → Converts segments into one polyline.
Group → Links objects but keeps individuality.
2. Join → Permanent until broken.
Group → Can be ungrouped anytime.

9. Block vs Xref

1. Block → Saved inside current drawing.
Xref → Linked from external file.
2. Block → Changes local only.
Xref → Updates automatically when source changes.

10. Model Space vs Paper Space

1. Model Space → Draw at real scale (1:1).
Paper Space → Set up layouts for plotting.
2. Model Space → Infinite workspace.
Paper Space → Limited to sheet size.

11. Zoom vs Scale

1. Zoom → Changes view only.
Scale → Changes actual object size.
2. Zoom → No effect on dimensions.
Scale → Affects real dimensions.

12. Save vs Save As

1. Save → Updates current file.
Save As → Creates new file with name/location.
2. Save → Same filename kept.
Save As → Allows renaming/versioning.

Applications of Blocks

1. Reusing Objects – Doors, windows, furniture, symbols, etc. can be reused in the drawing.
2. Consistency – Maintains uniform size, shape, and style for repeated elements.
3. Efficiency – Saves time by avoiding repeated drawing of the same object.
4. Ease of Editing – Editing the block updates all its instances automatically.
5. Collaboration – Standard symbols can be shared among multiple users.

Advantages of Blocks

1. Reduces file size by reusing objects instead of multiple copies.
2. Improves drawing speed and efficiency.
3. Ensures uniformity in repeated elements.
4. Easy modification – changing the block updates all instances.
5. Enhances organization of complex drawings.

Applications of Layers

1. Organizing Objects – Separate walls, doors, dimensions, text, and centerlines.
2. Controlling Visibility – Turn layers on/off or freeze/thaw to show only needed objects.
3. Editing Efficiency – Lock layers to prevent accidental changes; quickly select objects by layer.
4. Presentation & Plotting – Assign colors, linetypes, and lineweights; control which layers are plotted.
5. Collaboration – Different disciplines can work on separate layers in the same drawing.

Advantages of Layers

1. Keeps drawings organized and readable.
2. Makes editing faster and safer.
3. Provides control over visibility for complex drawings.
4. Ensures consistent appearance across drawings.
5. Improves collaboration and workflow in multi-user projects.

Orthographic Projection

Definition:

Orthographic projection is a method of representing a 3D object in 2D views by projecting its features perpendicularly onto planes.

- It shows the true shape and size of each face.
- Common views include Front, Top, and Side (Right/Left) views.

Difference Between Isometric and Oblique View

Feature	Isometric View	Oblique View
Projection	Axes are equally inclined (120° between axes)	Front face is parallel to the drawing plane; depth is at an angle
Scale	All three axes are scaled equally	Front face is full scale; depth may be foreshortened
Appearance	Looks more realistic 3D	Front face looks true, but sides appear distorted
Angles	No angles appear as true; all edges are foreshortened equally	Front face angles are true; side/back are distorted
Use	Mechanical and engineering drawings	Quick sketches, simpler visualization