



AutoCAD Level 1

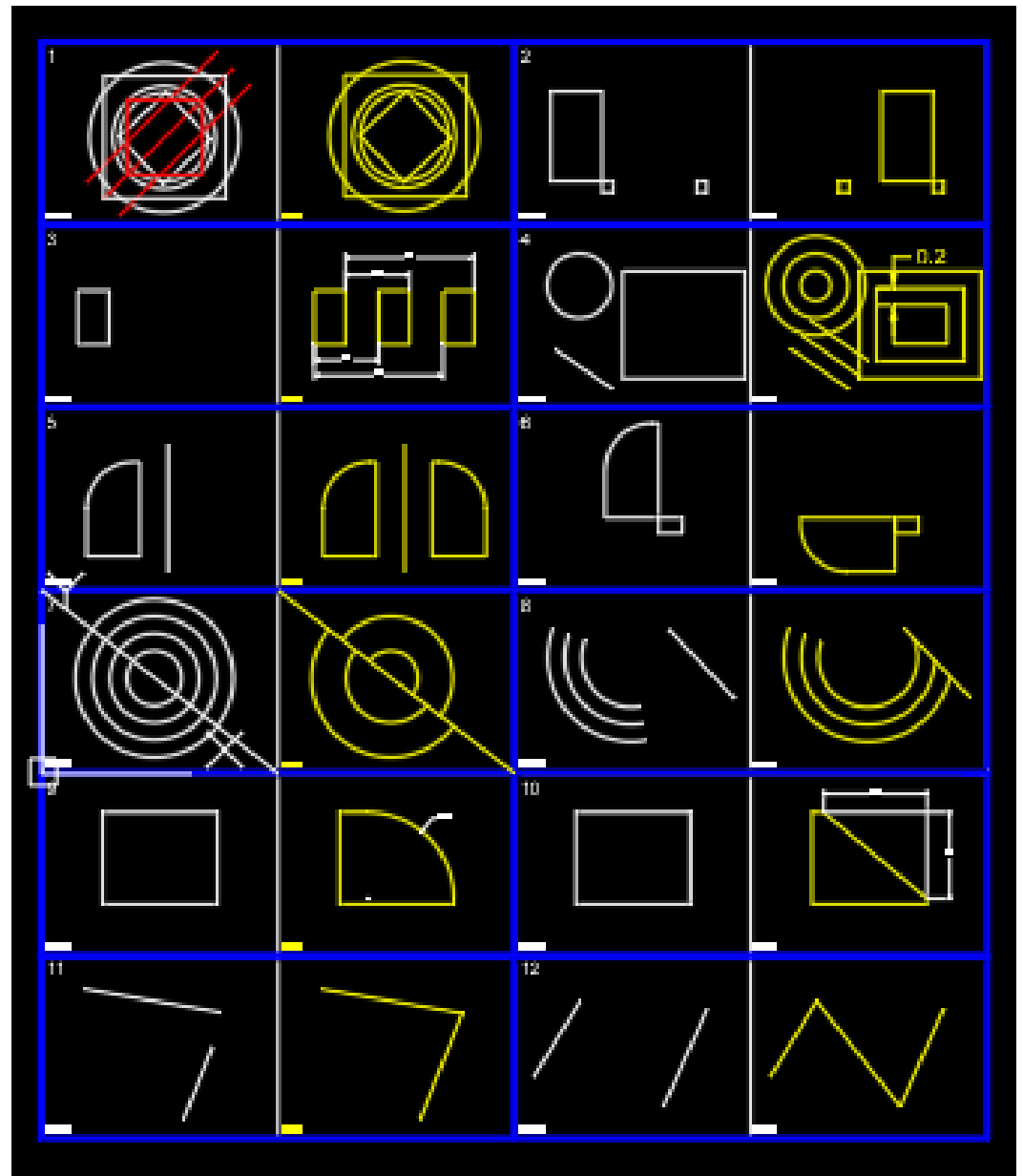
Session 4

AGENDA

- Various ways to select objects
- Modifying existing objects using various modify commands

Exercise 9. dwg

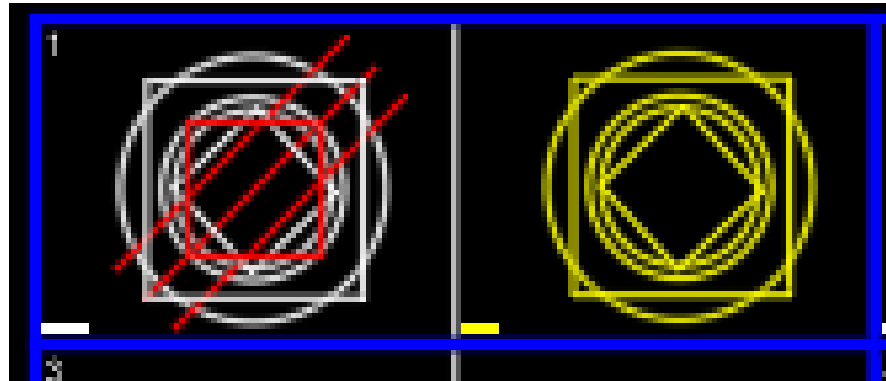
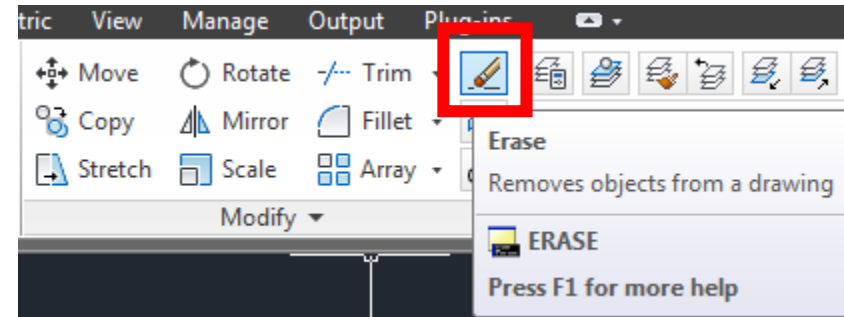
- Open Exercise 9.dwg .
- Complete the before box using the appropriate modify command so that it looks exactly like the after box.
- Make sure to use object snap endpoint in boxes 2,3,5,6,12.



Basic Modify commands- Erase

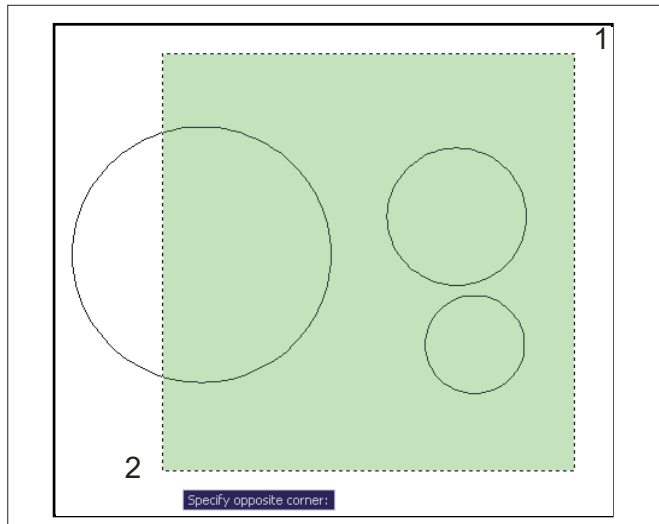
- Removes the selected set of objects from the current drawing.
- Command:** E
- Prompt: **Select objects:** Use the LEFT mouse button to click on the object/s you wish to erase and press **Enter**.

NOTE: If you want to erase **everything** in the file, type **all** at the **Select objects:** prompt and press **Enter**.

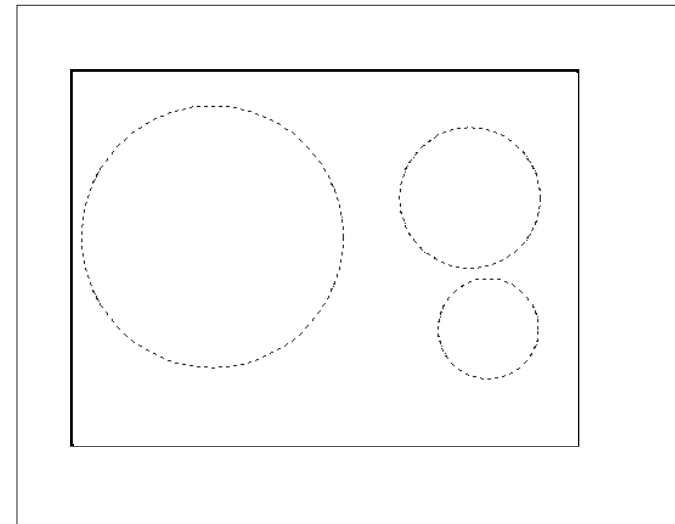


Selecting Objects

- Pick Method- Perhaps the most obvious way to select an object in AutoCAD is simply to pick it.
 - Window method- You can select objects by enclosing them in a selection window. A selection window is a rectangular area that you define in the drawing area by specifying two corner points at the Select Objects prompt. The order in which you specify the points makes a difference.
- Dragging from left to right (window selection) selects only objects entirely within the selection area.
- Dragging from right to left (crossing selection) selects objects within and objects crossing the selection area. Objects must be at least partially visible to be selected.



CROSSING SELECTION- right to left- dashed

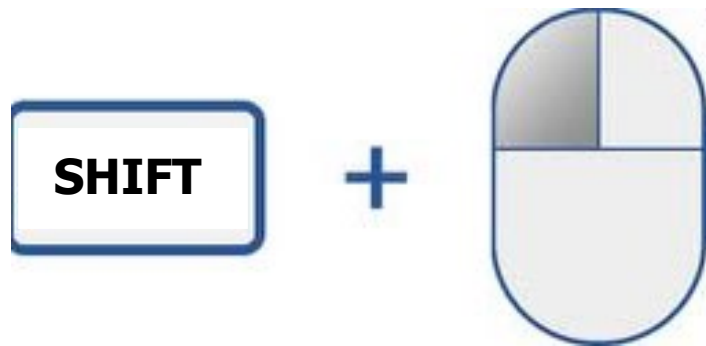


RESULT- 3 selected

Selecting Objects

- ALL
- LAST- L
- DE-SELECTING OBJECTS (REMOVING)

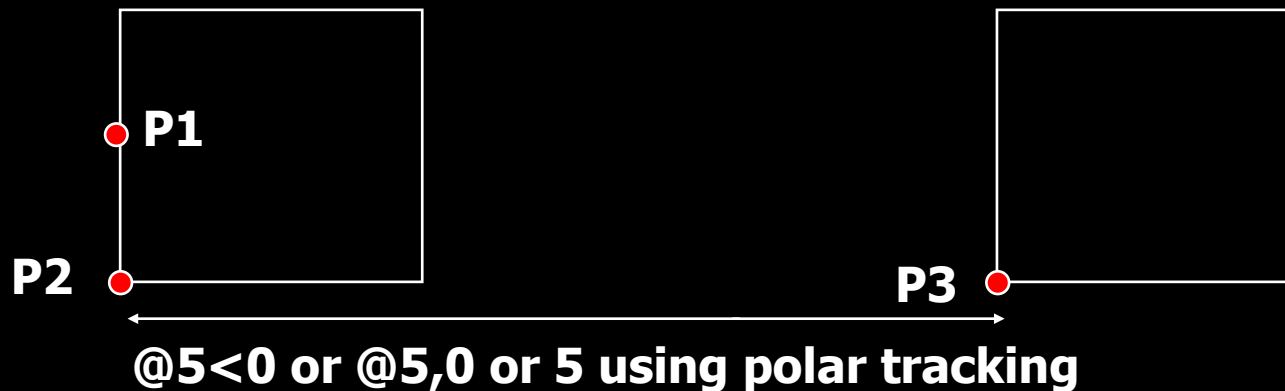
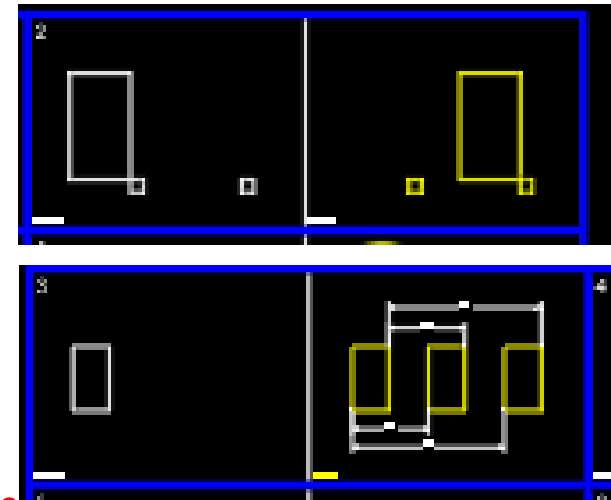
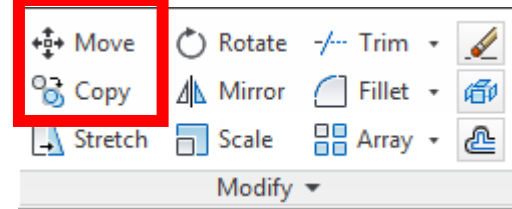
You can remove selected objects from a selection set just as easily by shift picking. If you hold the Shift key down on the keyboard while picking a selected object, that object will be deselected (removed from the current selection set). You can tell when a selected object has been deselected because it is no longer highlighted. You can remove more than one object at a time by holding down the Shift key while using implied windowing. However, none of the other selection options which require keyboard input will work using the shift pick method.



Basic Modify commands- Move and Copy

- The Move command works in a similar way to the Copy command except that no copy is made, the selected object(s) is simply moved from one location to another.
- Command: MOVE
- Select objects: (pick object to move, P1)
- Select objects: Return (to end selection)
- Specify base point or displacement: (pick P2 using object snap endpoint)
- Specify second point of displacement or <Use first point as displacement>:

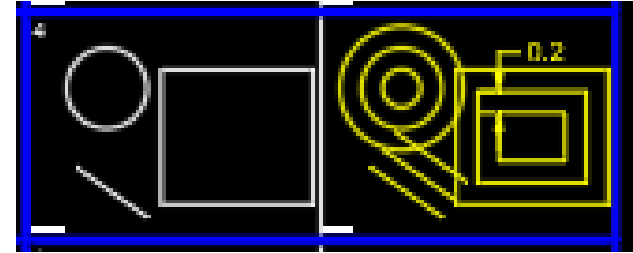
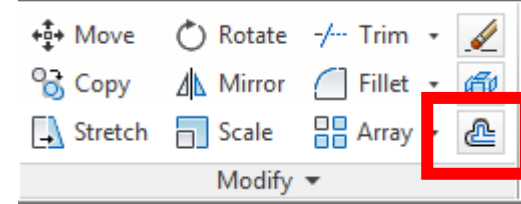
(pick P3 or use coordinate system to type in distance of movement)



Note: Copy command works in the same way but the original is kept. Also the Copy command has a multiplier feature to copy more than once. Remember that the second point of displacement is always relative to the basepoint.

Basic Modify commands- Offset

- Offset is probably one of the most useful commands for constructing drawings. The Offset command creates a new object parallel to or concentric with a selected object. The new object is drawn at a user defined distance (the offset) from the original and in a direction chosen by the user with a pick point



Command: o

OFFSET

Current settings: Erase source=No

Layer=Source OFFSETGAPTYPE=0

**Specify offset distance or
[Through/Erase/Layer] <Through>:**

2

Select object to offset or [Exit/Undo]

<Exit>: pick an object

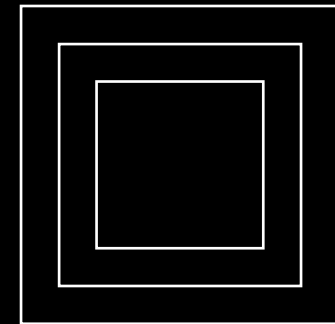
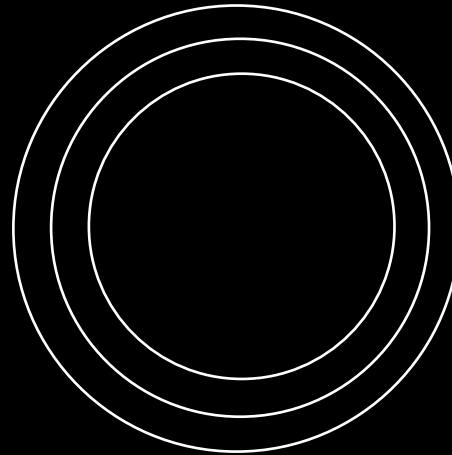
**Specify point on side to offset or
[Exit/Multiple/Undo] <Exit>: pick a
side**

Select object to offset or [Exit/Undo]

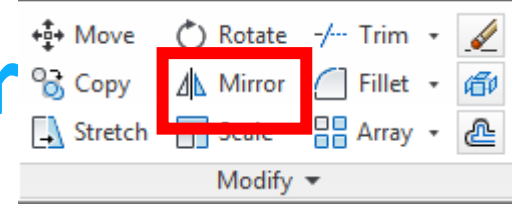
**To offset at a different distance,
Exit the command and re-enter**

new

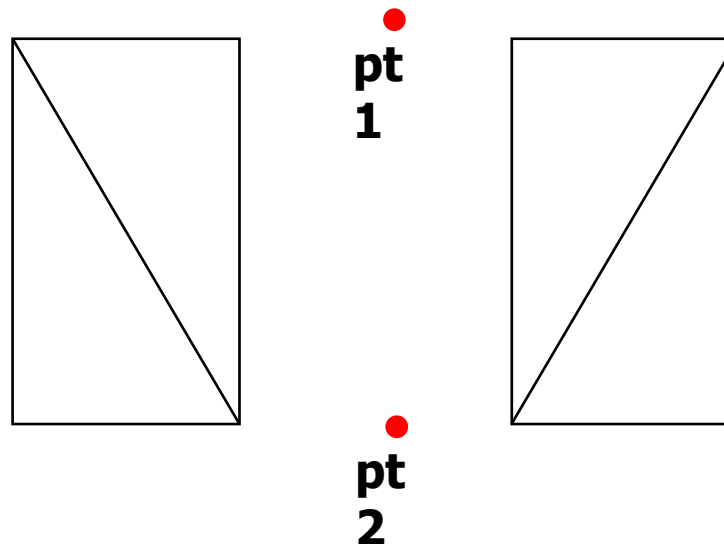
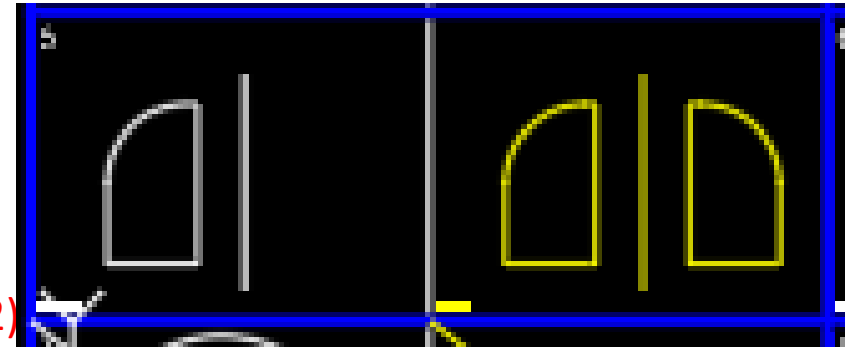
distance



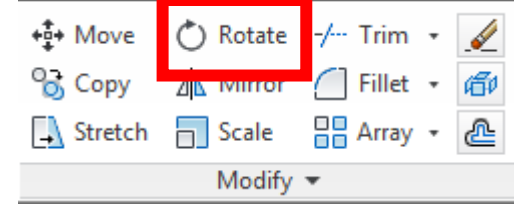
Basic Modify commands-Mirror



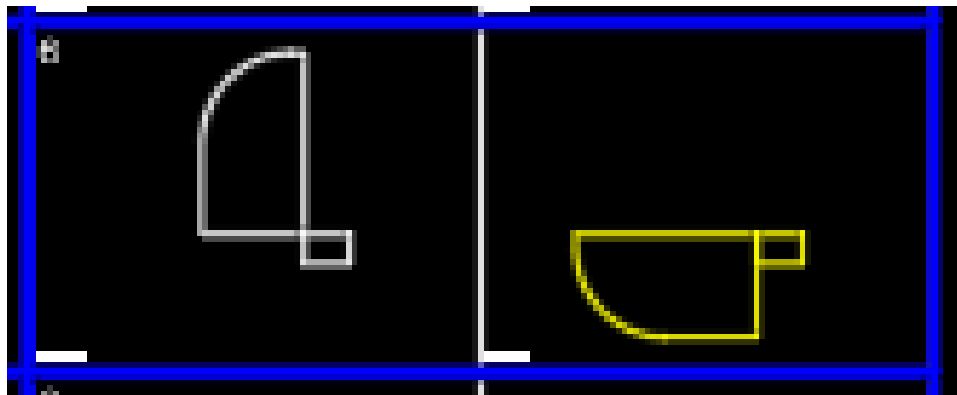
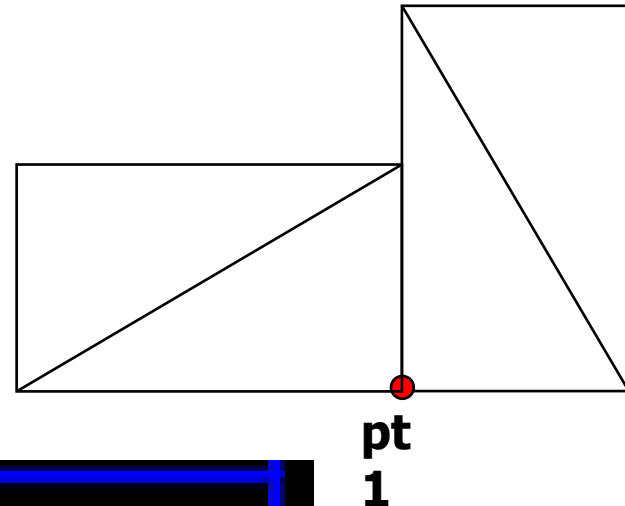
- The Mirror command allows you to mirror selected objects in your drawing by picking them and then defining the position of an imaginary mirror line using two points.
- Command: MIRROR
- Select objects: (pick objects to mirror)
- Select objects: Return (to end selection)
- Specify first point of mirror line: (pick Pt1)
- Specify second point of mirror line: (pick Pt2)
- Delete source objects? [Yes/No] <N>:
Return (for No to keep the original object)



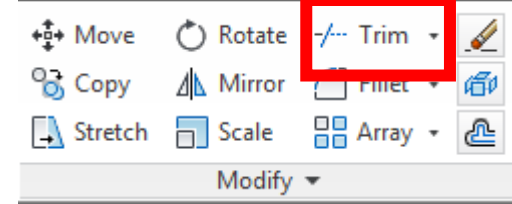
Basic Modify commands- Rotate



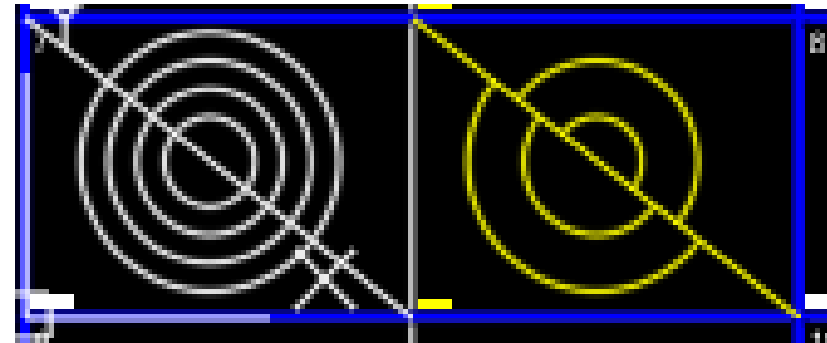
- The Rotate command allows an object or objects to be rotated about a point selected by the user. AutoCAD prompts for a second rotation point or an angle which can be typed at the keyboard.
- Command: ROTATE
- Select objects: (pick objects to rotate)
- Select objects: Return (to end selection)
- Specify base point: (pick base point, Pt1)
- Specify rotation angle or [Reference]:
(pick second point, or enter angle)



Basic Modify commands- Trim



- The Trim command can be used to trim a part of an object. In order to trim an object you must draw a second object which forms the "cutting edge". Cutting edges can be lines, polylines, circles, arcs or ellipses. The illustration on the right shows the Trim command in action.



Command: tr

TRIM

Current settings: Projection=UCS, Edge=None

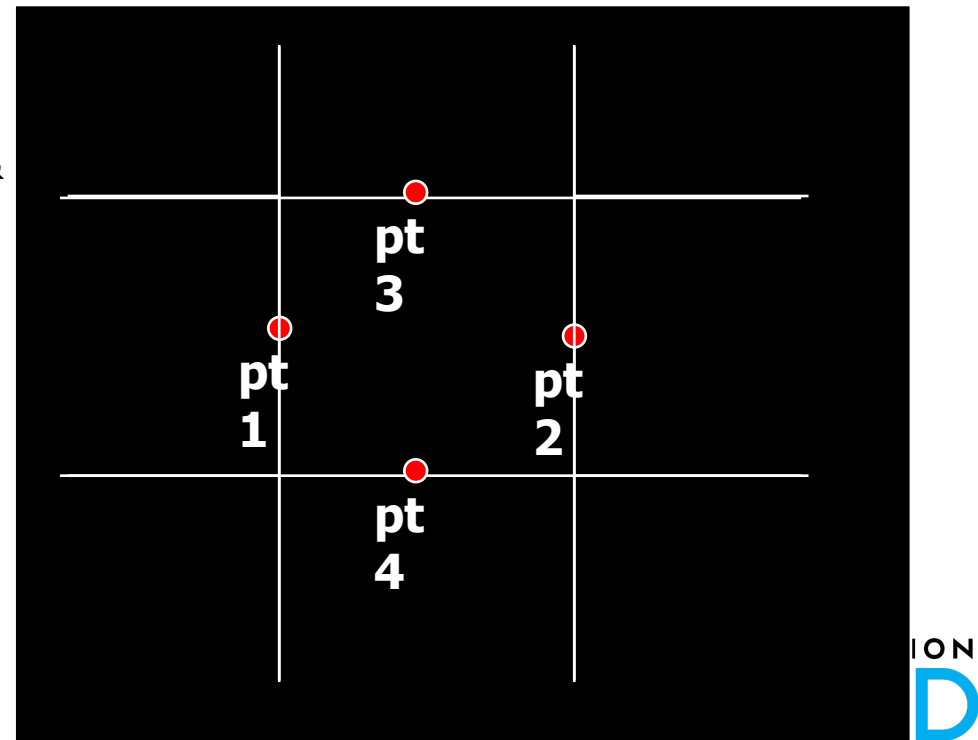
Select cutting edges ...

Select objects or <select all>: 2 found (select pt1 & pt2)

Select objects: press return

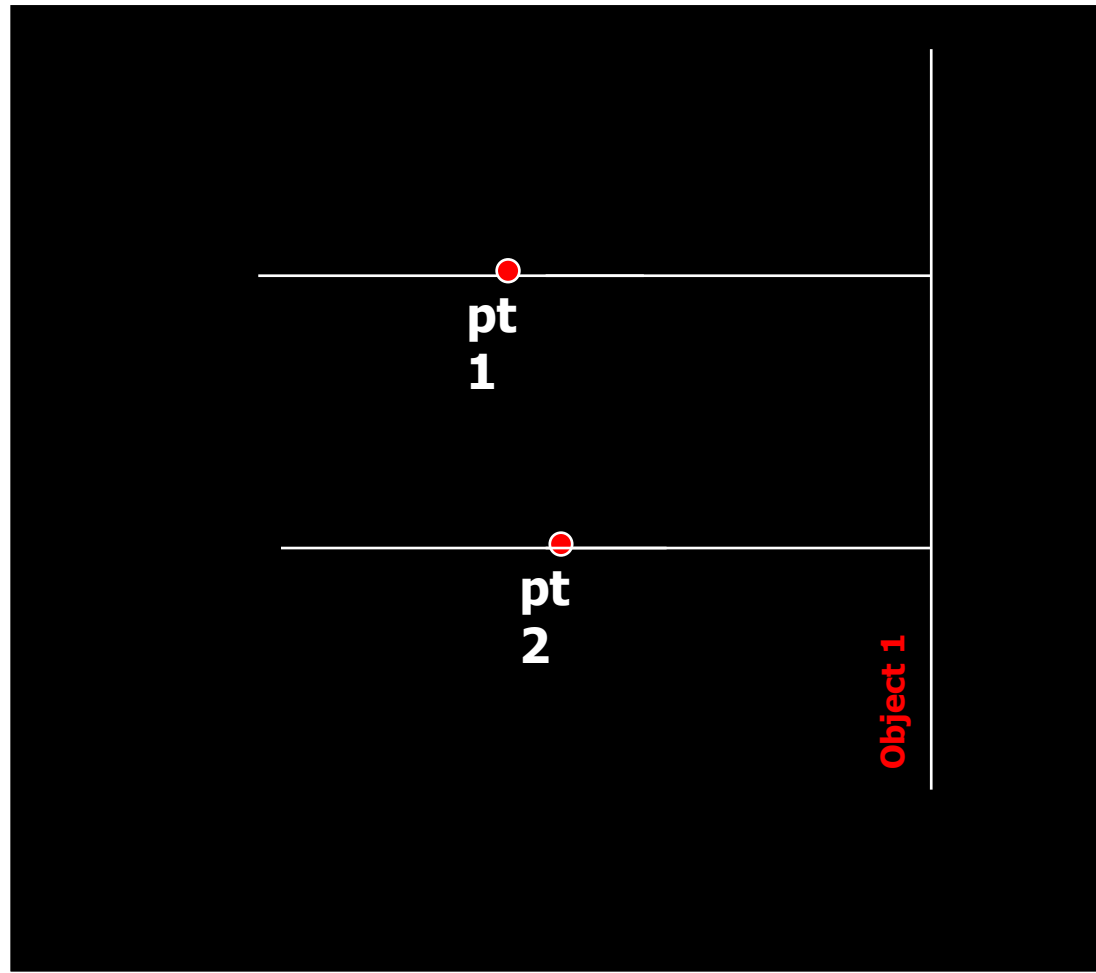
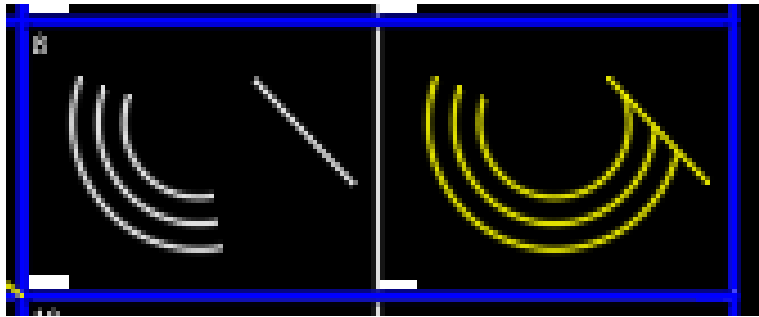
Select object to trim or shift-select to extend or [Fence/Crossing/Project/Edge/eRase/Undo]: pick pt3

Select object to trim or shift-select to extend or [Fence/Crossing/Project/Edge/eRase/Undo]: pick pt4

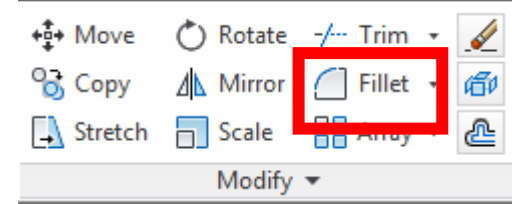


Basic Modify commands- Extend

- This command extends a line, polyline or arc to meet another drawing object (known as the boundary edge). In the illustration below, two lines (red) are extended to meet another line (cyan) which forms the boundary edge. This command works in a similar way to the Trim command, described previously. Two selections are made, one for the boundary edge(s) and one for the object(s) to extend.



Basic Modify commands- Fillet



- The FILLET command is basically used for rounding off edges, but the way the command operates makes it useful for other features.

before

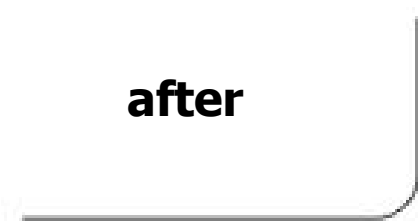


after

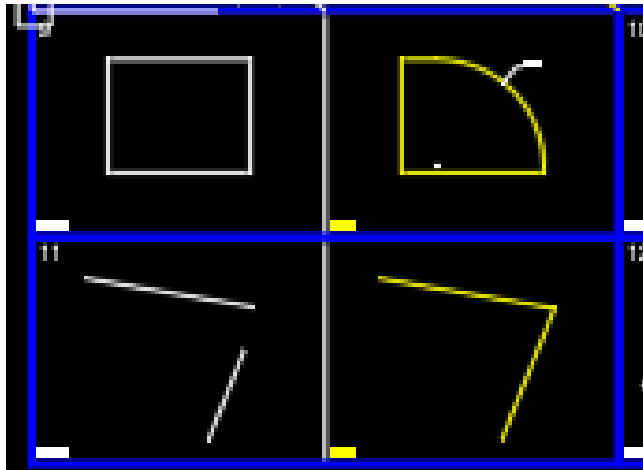


Fillet with radius = 0

after



Fillet with radius greater than 0



Command: F
FILLET
Current settings: Mode =
TRIM, Radius = 0
Select first object or
[Undo/Polyline/Radius/Trim/
Multiple]: r
Specify fillet radius <0>: 0

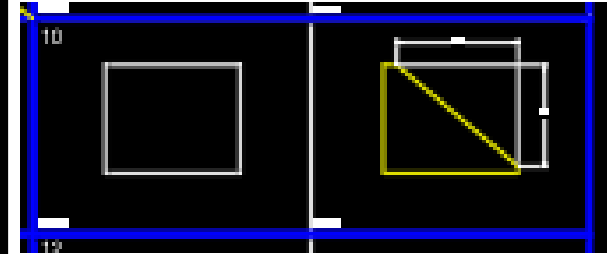
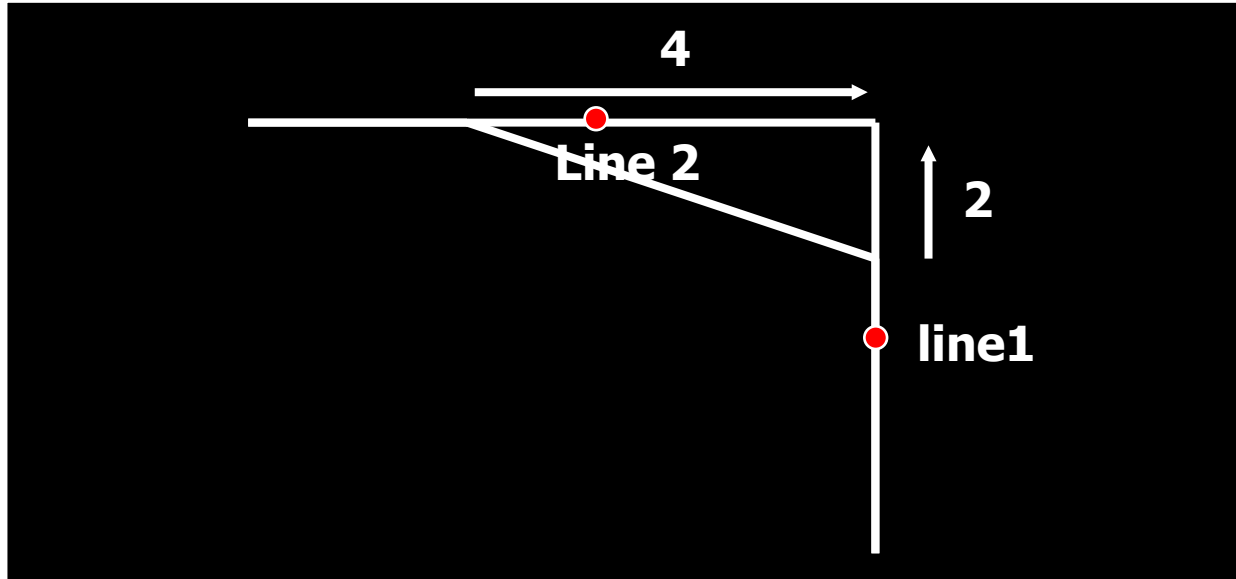
Select first object or
[Undo/Polyline/Radius/Trim/
Multiple]: select a line
Select second object or shift-
select to apply corner or
[Radius]: select the other line

Command: F
FILLET
Current settings: Mode =
TRIM, Radius = 0
Select first object or
[Undo/Polyline/Radius/Trim/
Multiple]: r
Specify fillet radius <0>: 2

Select first object or
[Undo/Polyline/Radius/Trim/
Multiple]: select a line
Select second object or shift-
select to apply corner or
[Radius]: select the other line

Basic Modify commands- Chamfer

- The chamfer command in AutoCAD serves a similar purpose to the fillet command covered in previously, however, instead of adding a radius to the edges this command adds a “slope”.



Command: cha

CHAMFER

(TRIM mode) Current chamfer Dist1 = 0.0000, Dist2 = 0.0000

Select first line or [Undo/Polyline/Distance/Angle/Trim/mEthod/Multiple]: d

Specify first chamfer distance <0.0000>: 2

Specify second chamfer distance <2.0000>: 4

Select first line or [Undo/Polyline/Distance/Angle/Trim/mEthod/Multiple]: select line 1

Select second line or shift-select to apply corner or [Distance/Angle/Method]:select line 2

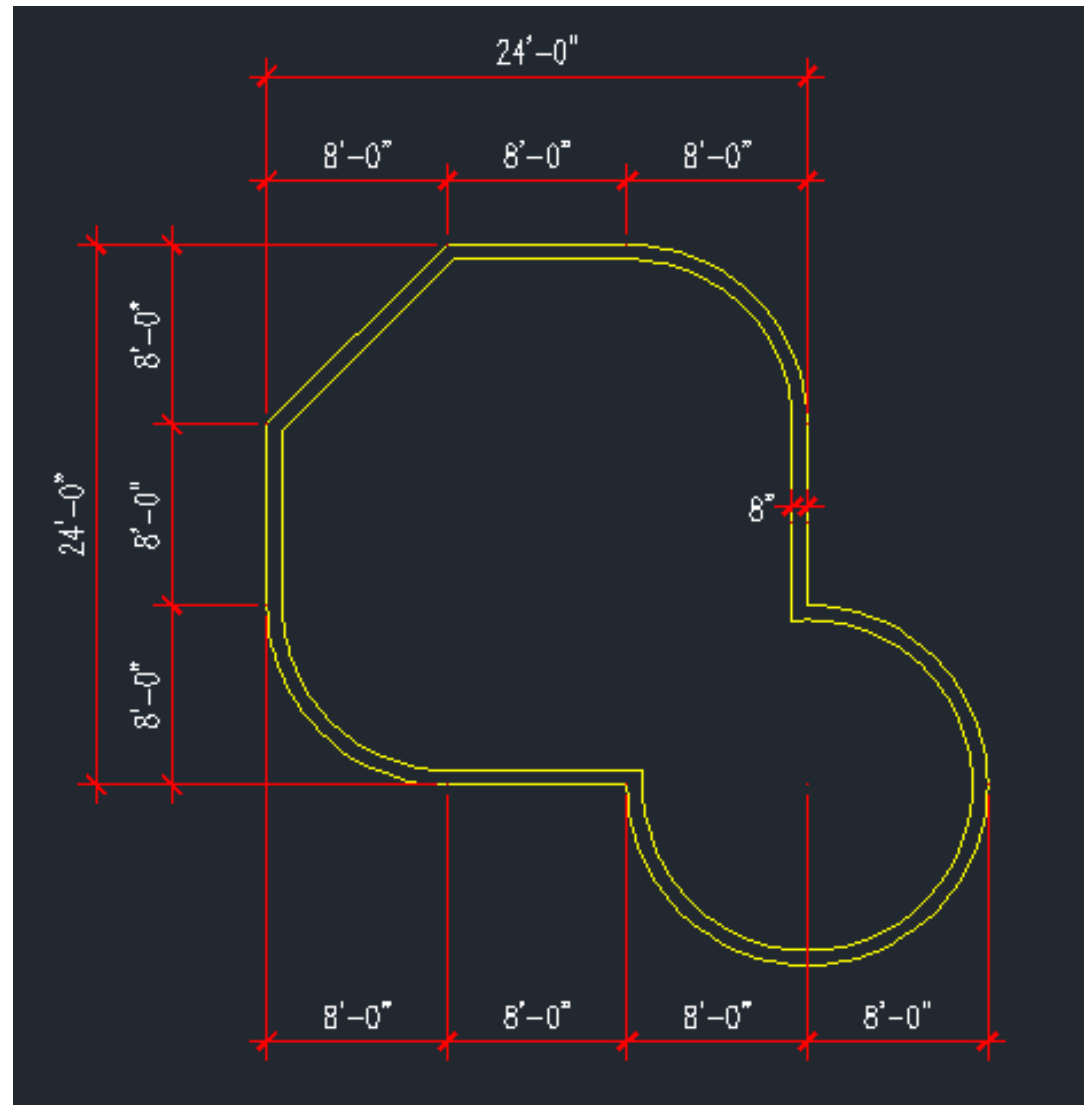
Exercise 10.dwg

Commands:

Units- architectural

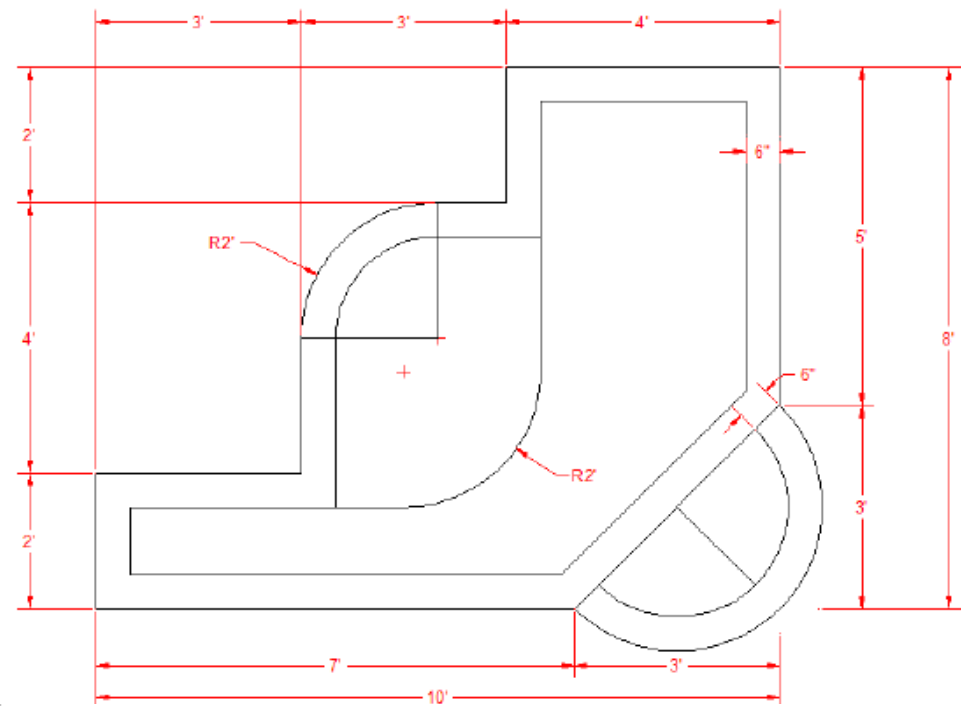
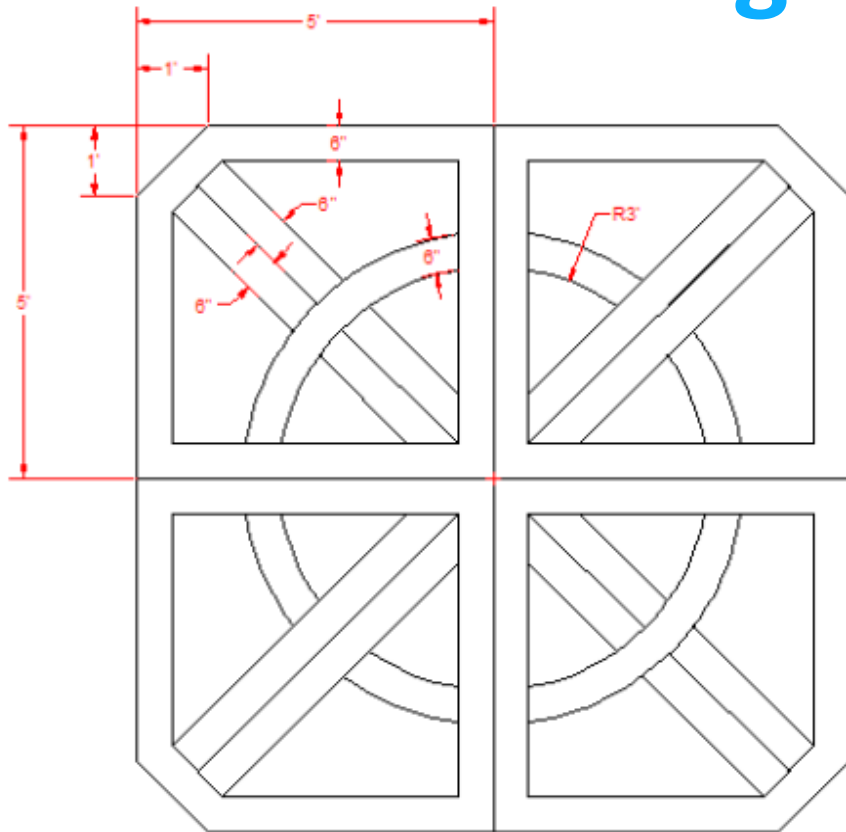
Limits- 64',64'

- Rectangle- 24'x24'
- Circle- rad 8'
- Chamfer- dist=8'
- Fillet- r 8'
- Fillet- r 8'
- Trim
- Pedit-join
- Offset



- UNIT- ARCHITECTURAL (Feet)
- LIMITS- 30', 20'

Exercise 12.dwg



Exercise 11.dwg