



University of Sallahadin  
College of Engineering  
Electrical Engineering Dept.



# **Electrical CAD**

## **Lecture One**

# **Getting Start**

By :

Sarkar Jawhar

MSc in Electrical Engineering

[sarkar.mohammed@su.edu.krd](mailto:sarkar.mohammed@su.edu.krd)

# Contents of This Lecture

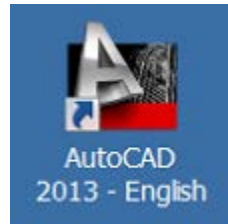
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- Start AutoCAD
- Identify the various parts on the screen
- Begin a new drawing
- Open an existing drawing
- Saving AutoCAD Drawing
- Exiting AutoCAD
- Drawing Lines
- Drawing Rectangles
- Drawing Circles
- Object Selection
- Erasing Objects
- Getting it back

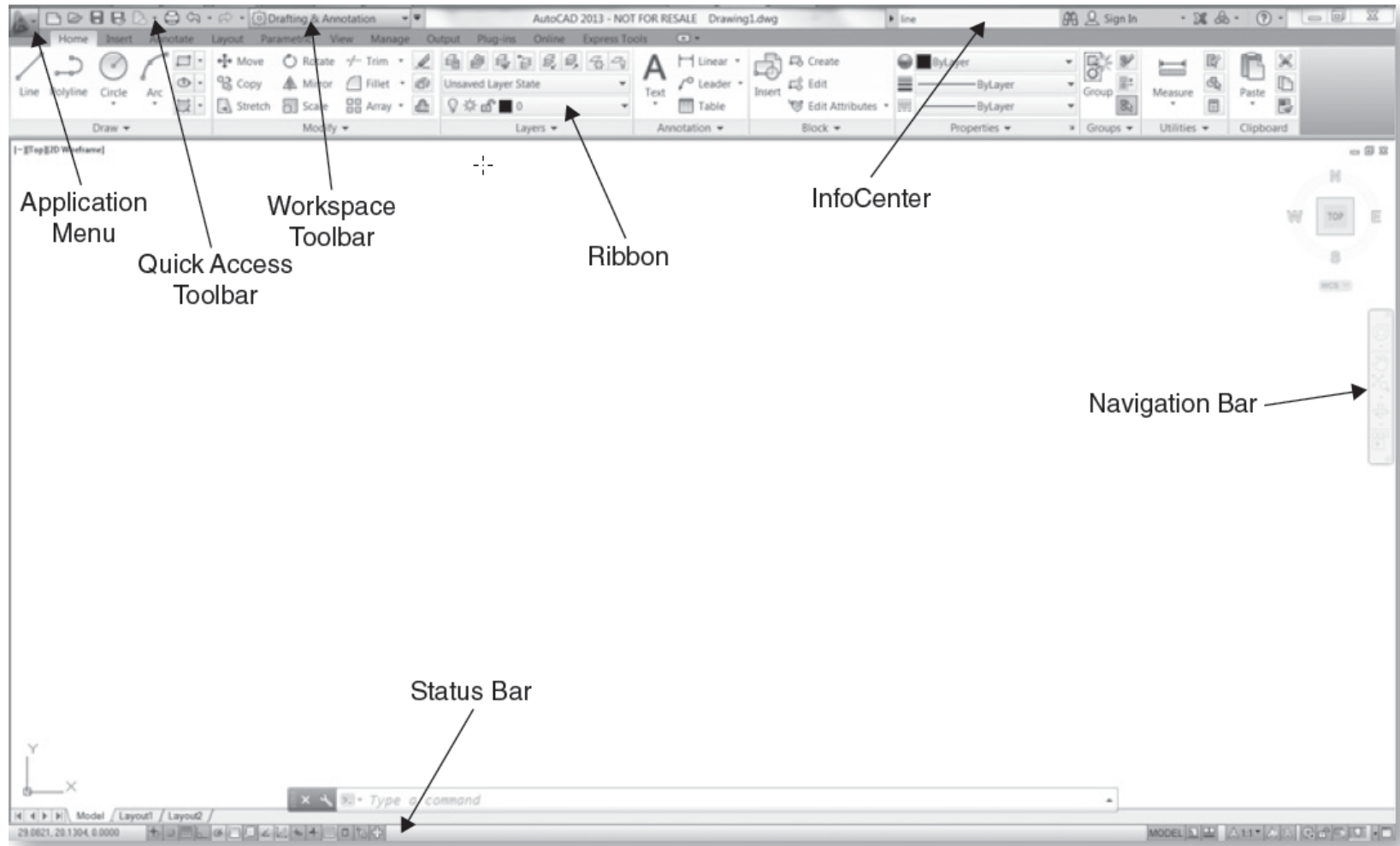
# Launching AutoCAD

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1. Start from the Windows program manager.
2. All Programs > Autodesk > AutoCAD.
3. Click the AutoCAD for Windows icon.

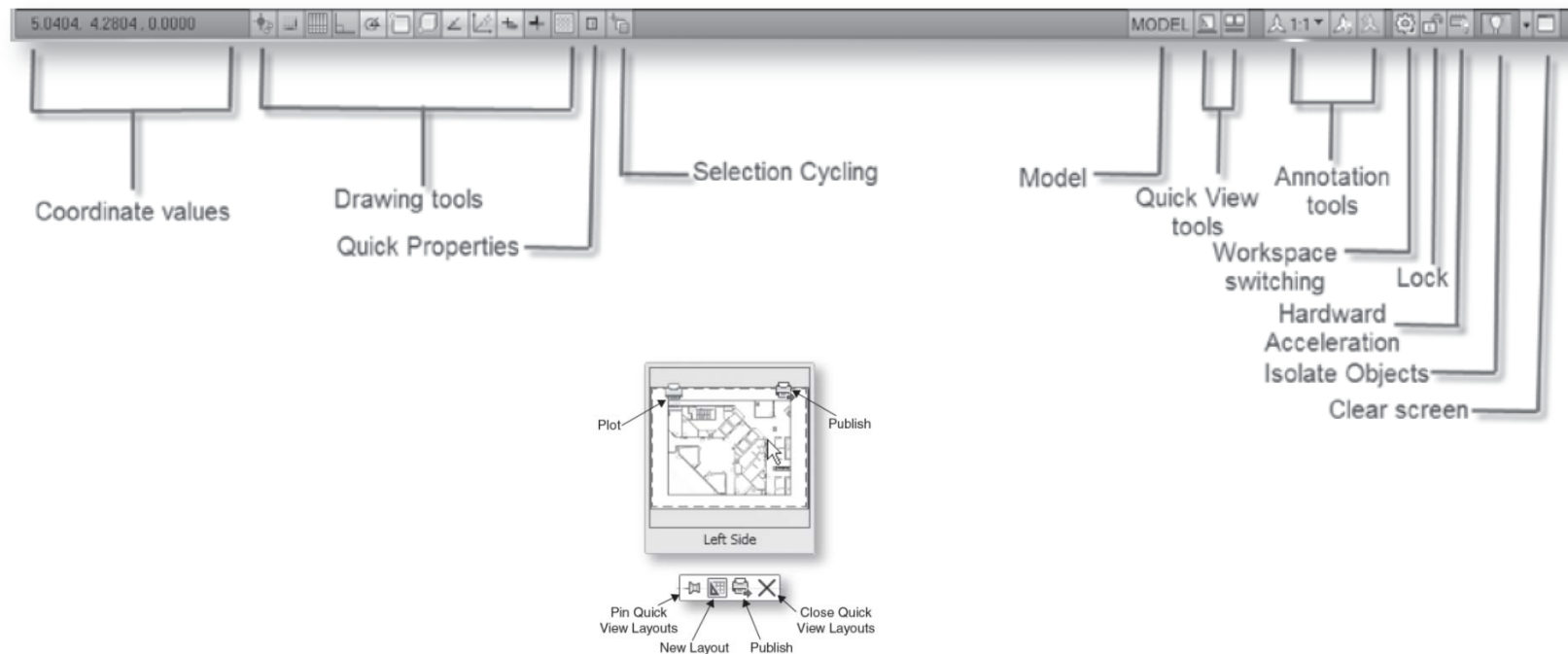


# AutoCAD 2013 Initial Workspace



# AutoCAD 2013 Initial Workspace

The status bar displays the cursor's coordinate values along with several buttons for turning on and off drawing tools and displays several tools for scaling annotations. Different tools are displayed for model space and paper space.



# Begin a New Drawing

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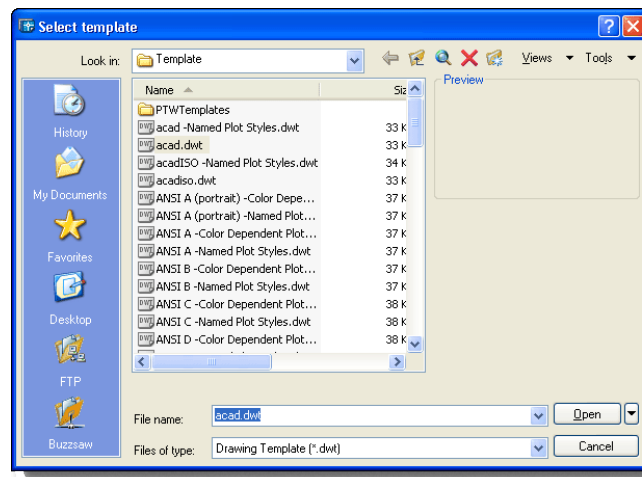
To create a new drawing, invoke the **NEW** command from the Quick Access toolbar.



# Begin a New Drawing

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Displays the Select Template dialog box and select appropriate template to create a new drawing.

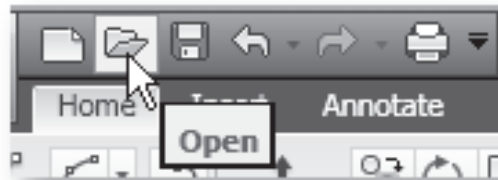


A drawing template file is a drawing file with selected parameters already preset to meet certain requirements, so that you do not have to go through the process of setting them up each time you wish to begin drawing with those parameters.

# Open an Existing Drawing

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The **OPEN** command allows you to open an existing drawing.



AutoCAD displays the Select File dialog box. The Select File dialog box is similar to the standard file selection dialog box, except that it includes options for selecting an initial view and for setting Open Read-Only, Partial Open, and Partial Open Read-Only modes.



# Saving AutoCAD Drawing

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AutoCAD provides different methods by which you can save drawings. It is very important to save drawing periodically.

**SAVE** command saves an unnamed drawing by prompting for a file name. If the current drawing is already named, then AutoCAD saves the drawing to the current drawing name.

**SAVEAS** command saves an unnamed drawing by prompting for a file name or by allowing to rename the current named drawing.

The **SAVEAS** command also allows you to save in various formats, including old versions of AutoCAD formats, and drawing template.



# Exit AutoCAD Program

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**EXIT** or **QUIT** commands exits AutoCAD.

Both the EXIT and QUIT commands exit the current drawing if there have been no changes since the drawing was last saved. If the drawing has been modified, AutoCAD displays the Drawing Modification dialog box prompting to save or discard the changes before exiting.

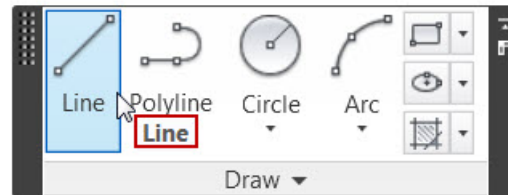
**CLOSE** command closes the active drawing and still remain in AutoCAD.

**CLOSEALL** command closes all the open drawings and still remain in AutoCAD.

# Drawing Lines

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Lines are drawn in AutoCAD with the **LINE** command.



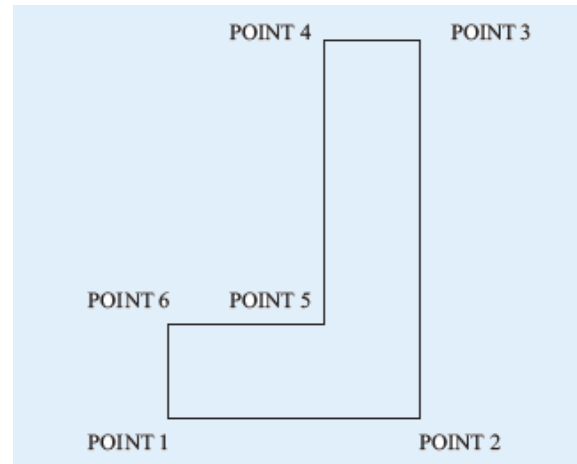
Available options include:

- ✓ Close
- ✓ Continue
- ✓ Undo

# Drawing Lines

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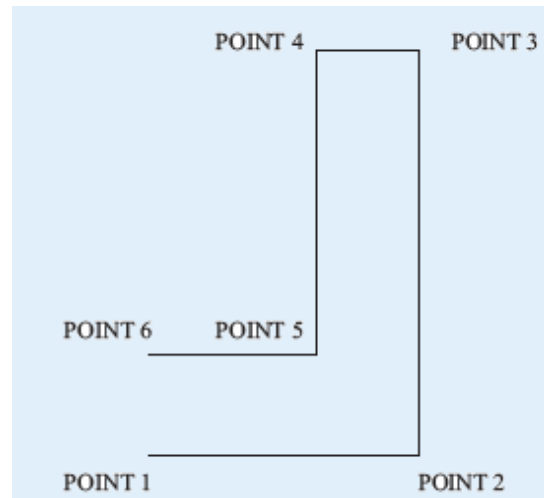
## Close Option



# Drawing Lines

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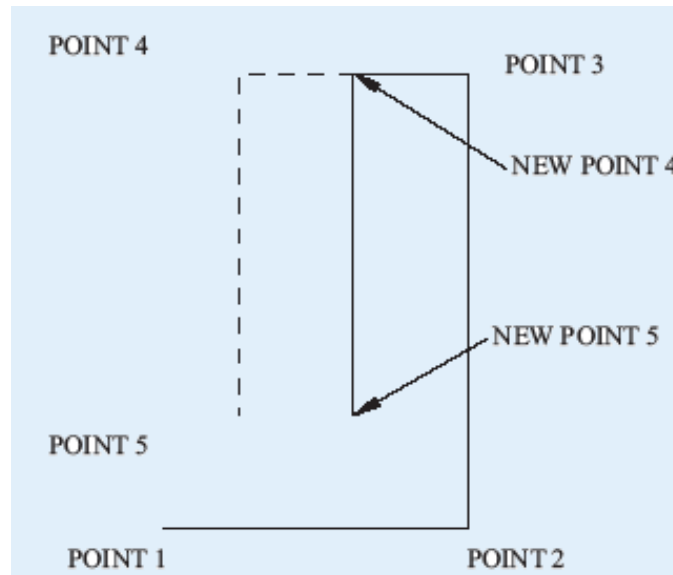
## Continue option



# Drawing Lines

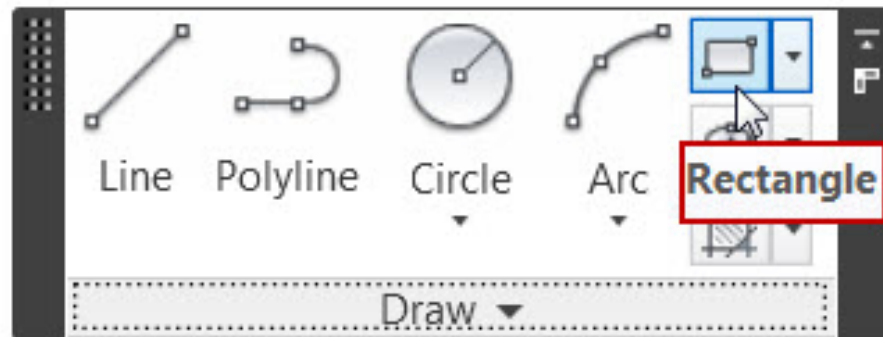
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## Undo option



# Drawing Rectangles

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# Cartesian coordinate system

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In **Cartesian** coordinate system a point's distance (in units) and its direction (+ or -) are indicated along the X, Y, and Z axes. You can enter absolute coordinates based on the origin (0,0), or relative coordinates based on the last point specified.

For example:

**3,4** --- indicates 3 units along x axis and 4 units along y axis measured from origin (0,0,) as absolute Coordinates.

**@3,4** --- indicates 3 units along x axis and 4 units along y axis measured from previous point as relative Coordinates.



# Polar coordinate system

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In **Polar** coordinate system a point is indicated in reference to a distance and an angle. By default the angle is measured in counter-clockwise direction from positive x axis. You can enter absolute coordinates based on the origin (0,0), or relative coordinates based on the last point specified.

For example:

**3<45** --- indicates 3 units measured from origin as distance and 45 degrees measured counter-clockwise direction from x axis.

**@3<45** --- indicates 3 units measured from previous point and 45 degrees measured counter-clockwise direction from x axis. .

# Drawing Circles

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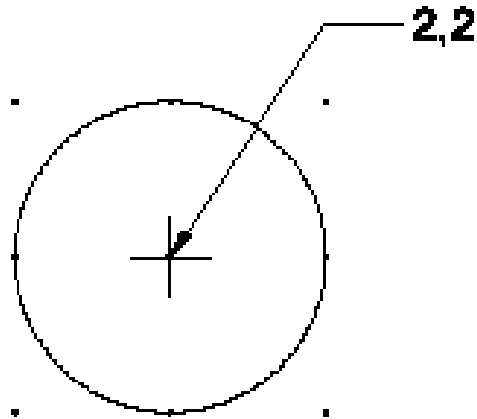
The **CIRCLE** command offers five different options for drawing circle:

- Center-Radius
- Center-Diameter
- 3 Points
- 2 Points
- Tangent, Tangent, Radius (ttr)

# Drawing Circles

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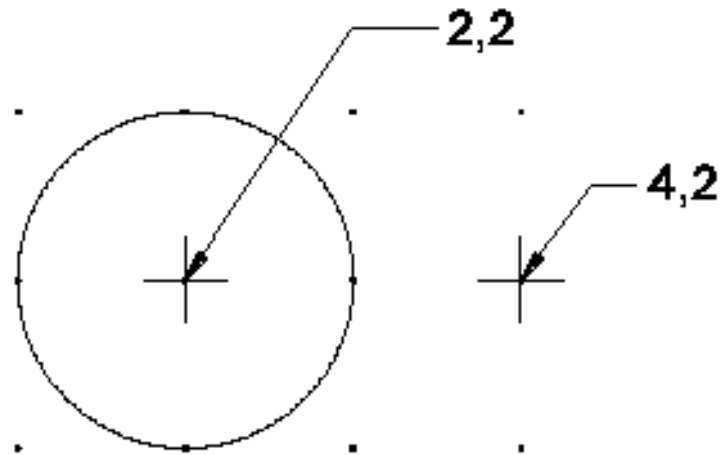
## Center-Radius



# Drawing Circles

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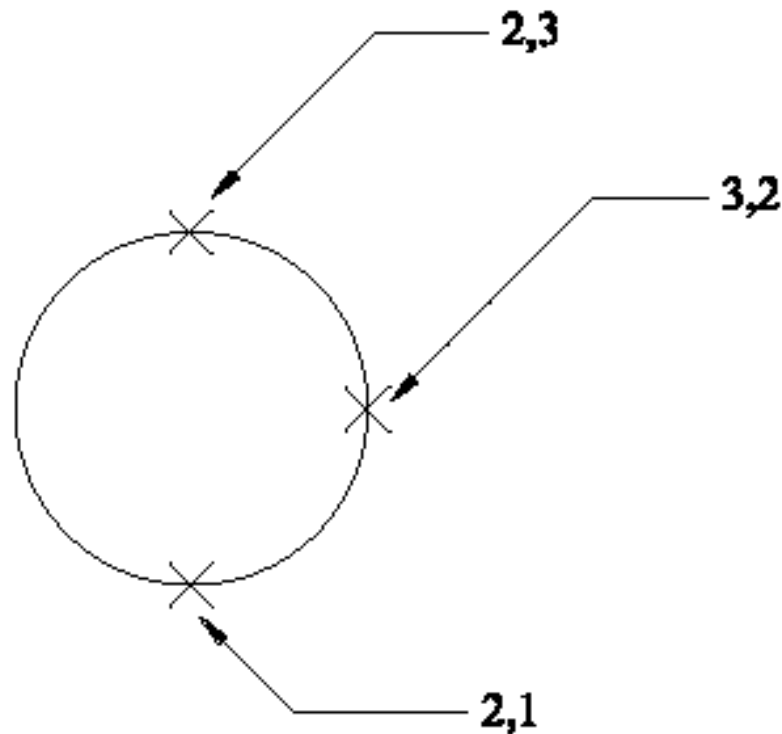
## Center-Diameter



# Drawing Circles

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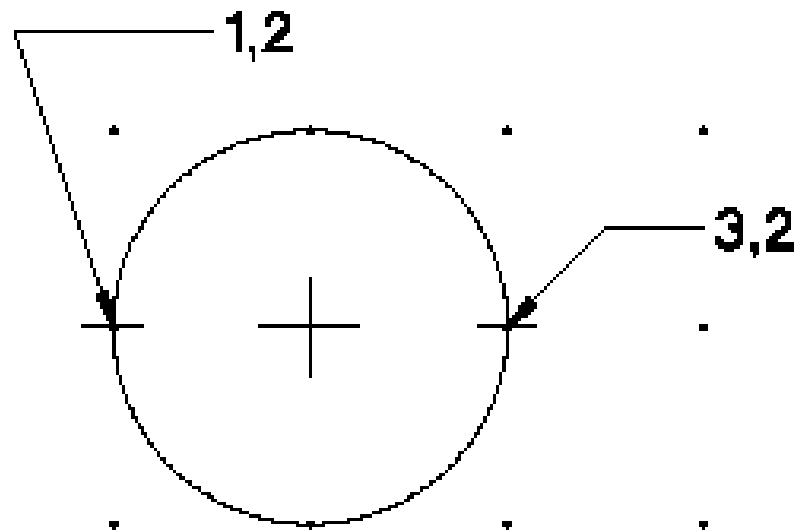
## 3 Points



# Drawing Circles

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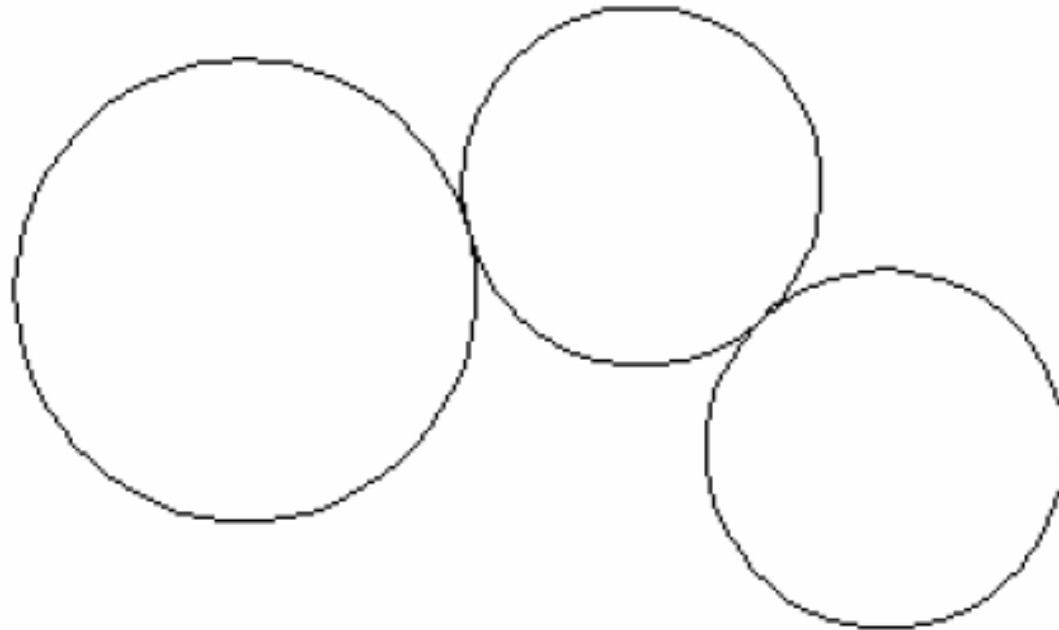
## 2 Points



# Drawing Circles

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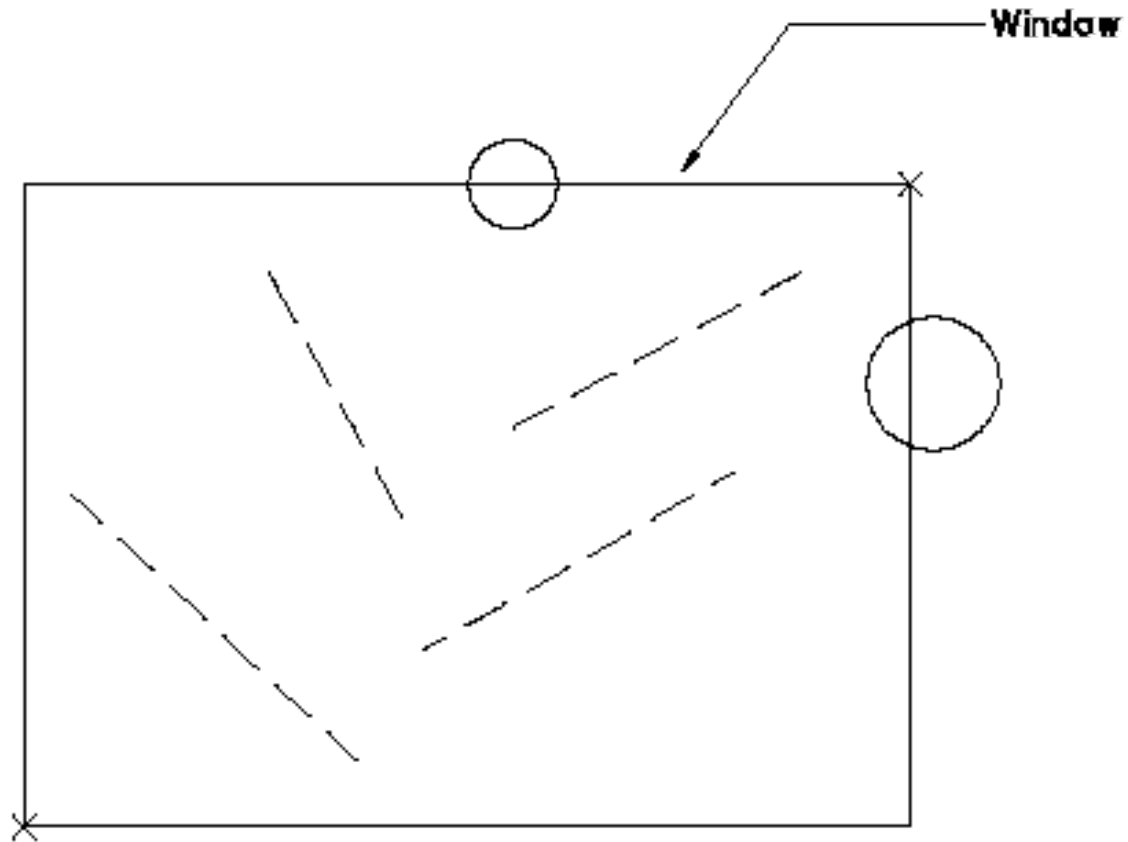
## Tangent, Tangent, Radius (ttr)



# Object Selection

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## Window Option

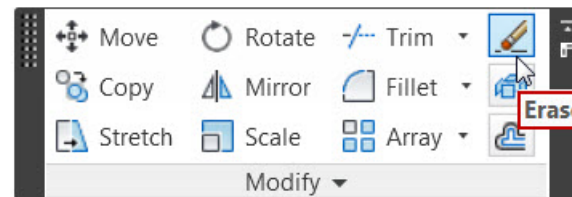




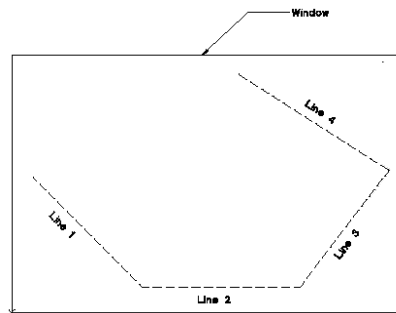
# Erasing Objects

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To erase objects from a drawing, invoke the **ERASE** command from the Modify toolbar.



Select objects: (select objects to be erased and press **ENTER** or **SPACEBAR**)



Or you can Select objects and press **DEL** on keyboard.

# Getting it back

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The **OOPS** command restores objects that have been unintentionally erased. Whenever the **ERASE** command is used, the last group of objects erased is stored in memory.

# Next Lecture

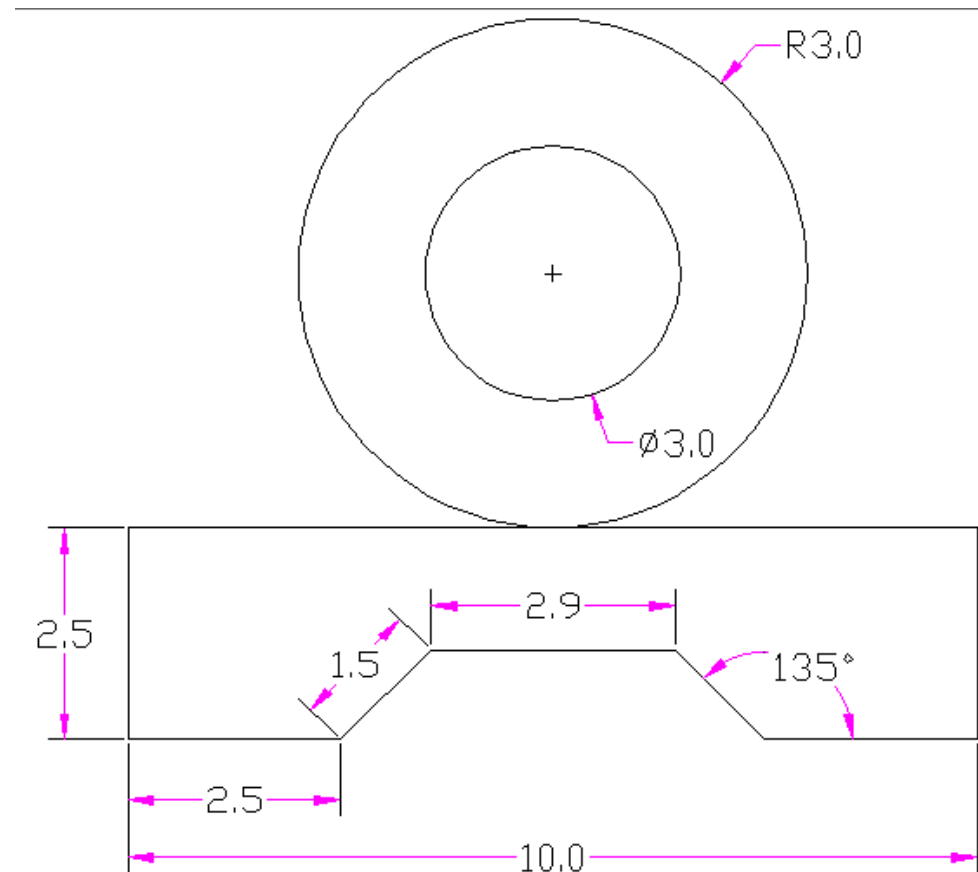
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- Fundamentals

# Assignment

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- Draw the following sketch using AutoCAD.



# Questions and Thank you

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*Thank  
you*