Chapter 3
Draw Commands

3.1 Line Command

Creates single straight line segments

1.	**Choose**	Draw, Line.

<div align="center">or</div>

2.	**Click**	the Line icon.

<div align="center">or</div>

3.	**Type**	LINE from the command prompt
		Command: **LINE** or **L**
4.	**Press**	ENTER
5.	**Pick**	From point: (**point**)
6.	**Pick**	Specify next point or [Close/Undo]:(**point**)
7.	**Pick**	Specify next point or [Close/Undo]:(**point**)
8.	**Press**	ENTER to end line sequence

<div align="center">or</div>

9.	**Type**	U to undo the last segment
		To point: **U** (undo)

<div align="center">or</div>

10.	**Type**	C to create a closed polygon
		To point : **C** (close)
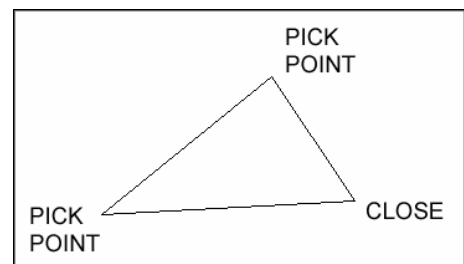
TIPS:

• You can continue the previous line or arc by responding to the From point: prompt with a space or ENTER.

• Choose the right mouse button for the line pop-up menu to appear while in the line command
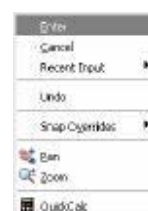
3.2 Cartesian Coordinate System

AutoCAD provides the user with an infinite two dimensional area to work with. Any entities place on the working two dimensional plane can be defined relative to the Cartesian coordinate system.

The Cartesian coordinate system divides a two dimensional plane with two perpendicular axis. The X axis runs horizontal across the bottom of the screen. The Y axis runs vertically along the left side of the screen. These two axis intersect at the bottom left corner of the screen.

Each of these axis is further divided into segments. Each segment is given a value. The X axis segments increase in value to the right. The positive X values are to the right of the intersection of the two axis. The negative X values are to the left. The positive Y values are above the intersection and increase up. The negative Y values are below.
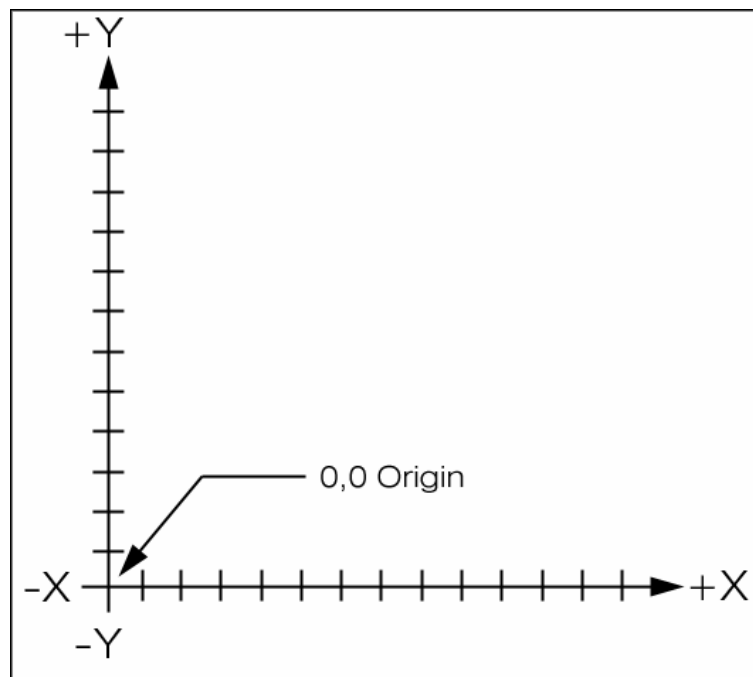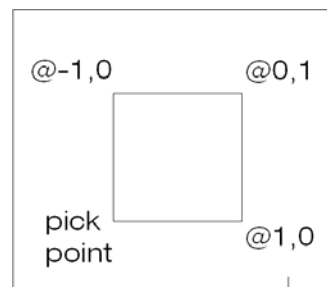
AutoCAD 2D Tutorial

Absolute Coordinates

    1.   **Type**   x,y coordinate when AutoCAD asks for a point.

    From point: **1,1**

    To point: **2,1**

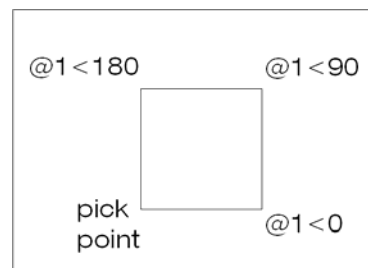   To point: **2,2**

    To point: **1,2**

    To point: **1,1**
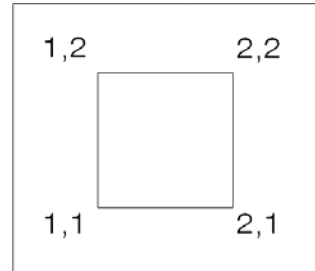
Relative Coordinates

    1.   **Type**   @deltax,deltay when AutoCAD asks for a point.

    From point pick point

    To point: **@1,0**

    To point: **@0,1**

   To point: **@-1,0**

    To point: **@0,-1**

Polar Coordinates

    1.   **Type**   @distance<angle when AutoCAD asks for a point.

    From point: pick point

    To point:**@1<0**

    To point:**@1<90**

    To point:**@1<180**

    To point:**@1<270**

3.3 Orthogonal Lines

Controls lines from being drawn at various angles to straight lines. When the snap grid is rotated, ortho mode rotates accordingly.

1. **Press**   Function Key **F8**.

                              or

2. **Double Click**   ORTHO from the Status Bar.

                              or
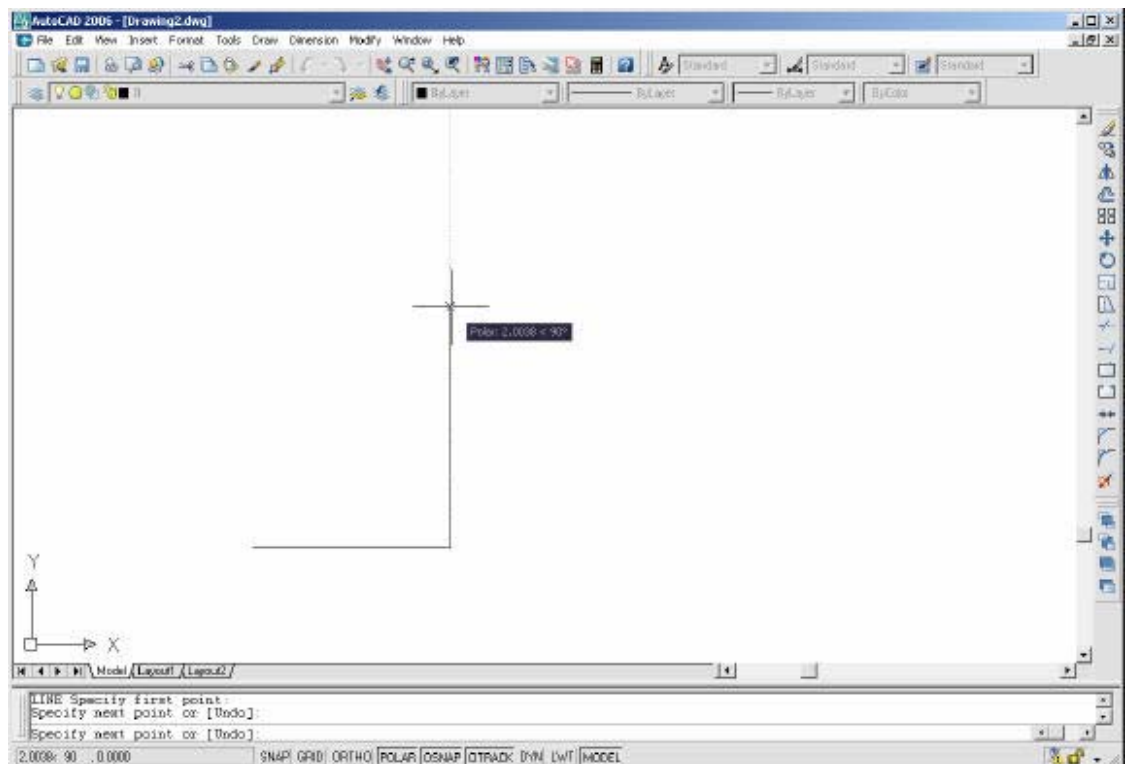
3. **Press**   CTRL + L.

Line drawn
with
ORTHO ON

Line drawn
with
ORTHO
OFF
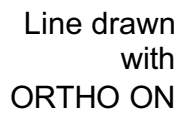
3.4 Direct Distance Entry

1. **Press**   function key **F8** to turn ORTHO (Orthogonal) lines on.
2. **Type**   LINE at the command prompt.
3. **Type**   the X or Y distance at the To pt prompt.

> Command: **LINE**
>
> From Pt: (**pick point**)
>
> To pt: **2**
>
> To pt: **2**

TIPS:

• Drag the cursor in the direction you want to draw (X or Y). If lines look crooked, be sure to check the setting for ORTHO.
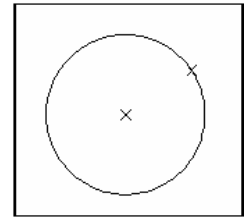
3.5 Circles and Arcs

Circle Command
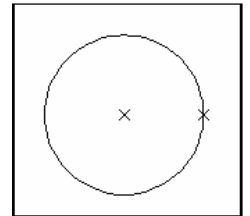
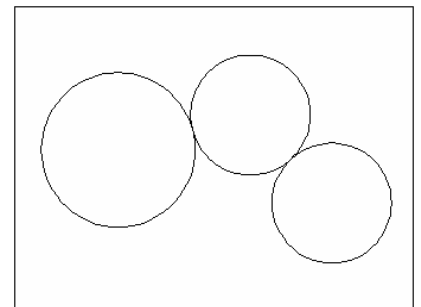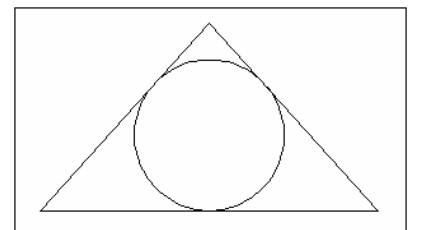|		
1.	**Choose**	Draw, Circle.
		or
2.	**Click**	the Circle icon.
		or
3.	**Type**	CIRCLE at the command prompt.
		Command: **CIRCLE**
4.	**Type**	One of the following options: 3P/2P/TTR/<<center point>>:
		or
5.	**Pick**	A center point.
6.	**Type**	A radius or diameter.
		or
7.	**Pick**	A radius or diameter Diameter/<<radius>>:

Circle, Center Radius

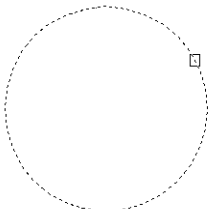*Circle, Center Diameter*

Circle, Tangent, Tangent Radius

Circle, Tangent, Tangent, Tangent

TIPS:

- To create circles that are the same size, press ENTER when asked for the circle radius.

- When selecting a circle with a pickbox, be sure to select the circumference of the circle.
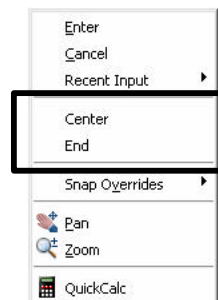
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Arc Command

      1.   **Choose**   Draw, Arc.

                            or

      2.   **Click**   the Arc icon.

                            or

      3.   **Type**   ARC at the command prompt

                            Command: **ARC**

      4.   **Draw**   One of the arcs.

TIPS:

-Except for 3 point arcs, arcs are drawn in a COUNTERCLOCKWISE direction.

- While in the arc command, press the right mouse button to select the following options for arcs:
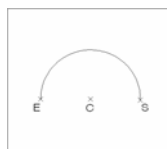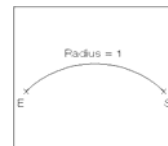
Arc Examples

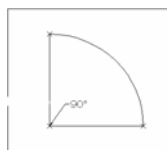3 point arc   Start ,center, chord length
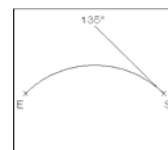
start, center, end   Start, end, radius

Start , center, included angle   Start, end, direction

3.6 Command Aliases

Aliases are shortcuts or alternative names for commands that you enter at the keyboard. They are stored in a file called ACAD.PGP and are often (but not always) the first letter of the AutoCAD command. For example, copy is CO or CP because C is already used by the Circle command.

Line Alias

1. **Type**   L at the command prompt.

     Command: **L**

Circle Alias

1. **Type**   C at the command prompt

     Command: **C**

Arc Alias

1. **Type**   A at the command prompt

     Command: **A**