### a. Alignment Grid ▦

The grid command allows you to set an alignment grid of dots of any desired spacing, making it easier to visualize distances and drawing size. you can turn the grid on and off by pick the grid button located in the status bar or (by pressing ▦ Ctrl + g or the F7 function key). The drafting setting dialog box permits you to review and make changes to the grid settings.

$Menu\ bar \Rightarrow Tools \Rightarrow drafting\ setting \Rightarrow snap\ and\ grid$
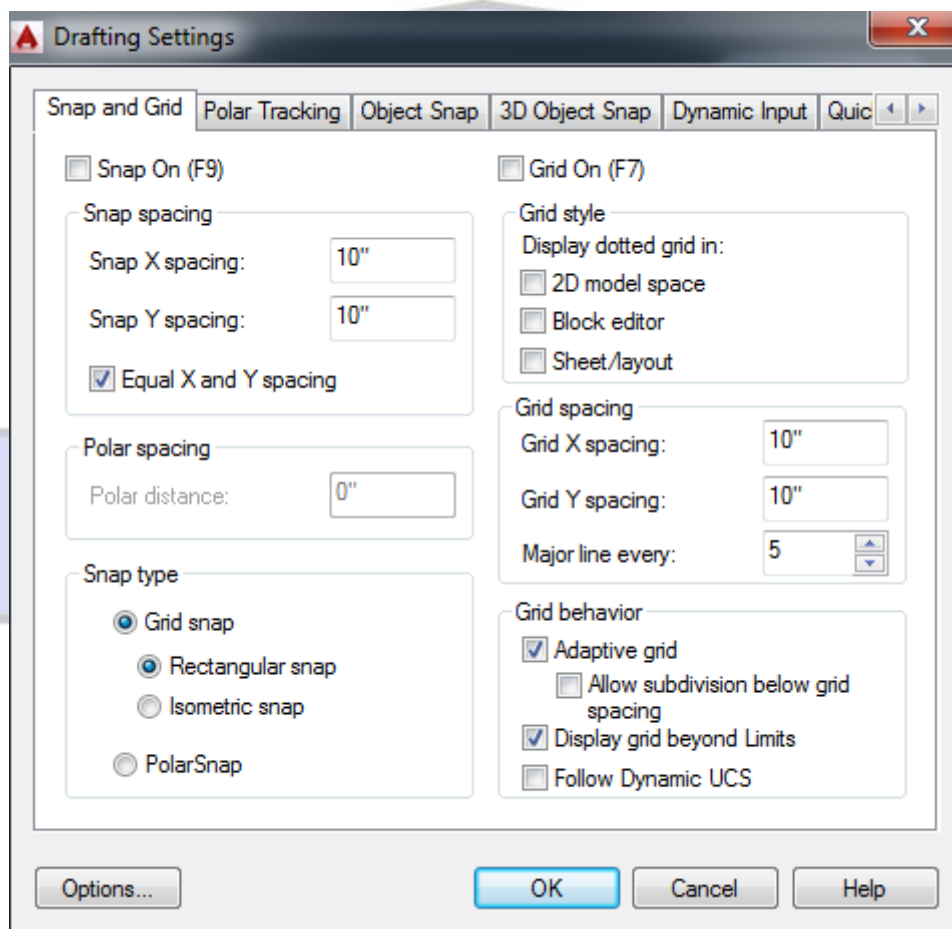
b. Snap grid

The snap grid is similar to the visual grid, but it is an invisible one. You cannot see the snap feature, but you can see the effects of it as you move the crosshairs Pick the snap button in the status bar to turn on the snap grid, (or pressing Ctrl + b or the F9 function key)

c. The Ortho Mode

Ortho short for orthogonal, allows you to draw horizontal or vertical lines quickly and easily. Ortho is on when the Ortho button on the status bar is depressed. You can toggle Ortho on and off by clicking the Ortho button. (or press F8 function key).

d. Polar

Polar makes it easy to draw lines at regular angular increments, such as 30, 45, or 90 degree. Using the F10 key or polar button toggles polar tracking on or off.

e. Object Snap (Osnap)

AutoCAD provides a capability called "object snap", or OSNAP for short, that enables you to "snap" to existing object end points, midpoints, centers , intersections, etc. available object snap mode are illustrated bellow:
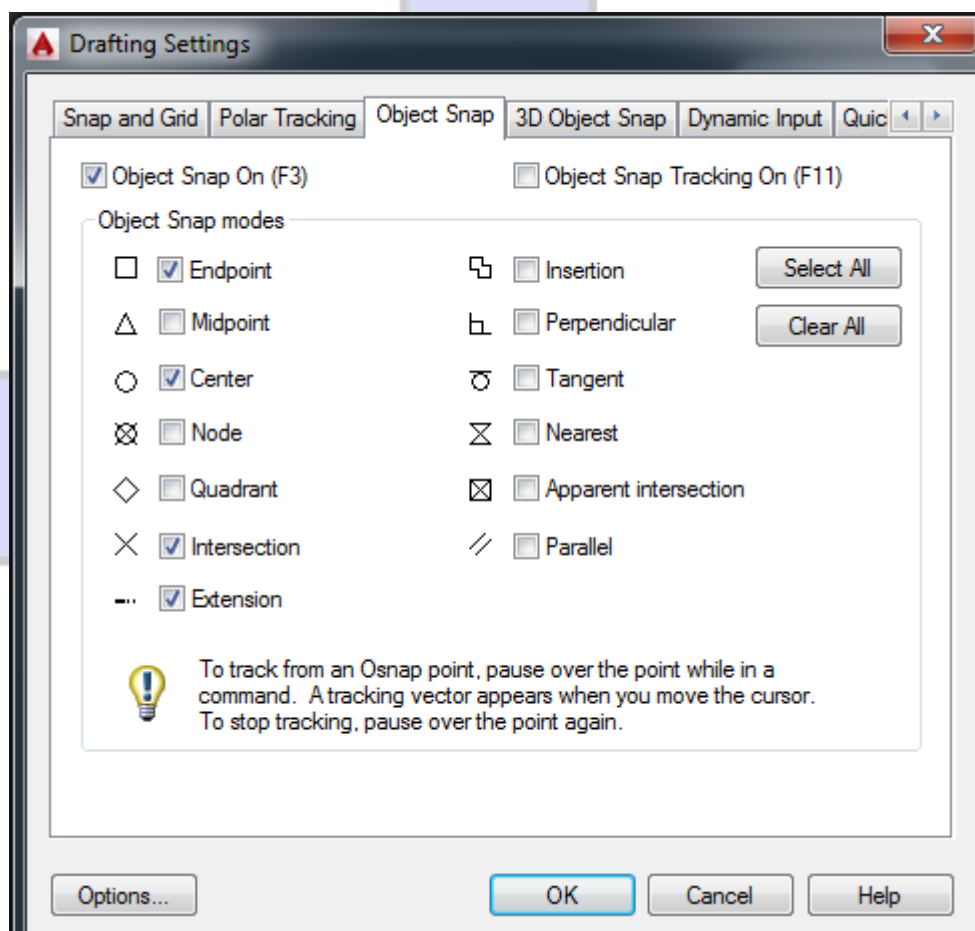
f. Object Snap Tracking (Otrack)

Object snap tracking is active when the alignment paths appear from one or more acquired object snaps. This feature is a part of AutoCAD's Auto tracking. You can toggle Auto Tracking on and off with the Otrack button on the status bar or by toggling F11.

g. DYN

A feature that enables you to enter data or commands near the mouse pointer instead of entering in "the "command line

"To control the dynamic input properties right click on button and select setting

h. LWT

LWT short of line weight produces the line weight settings dialog box, this dialog box assigns line weights to objects.

i. Model

Model Space used to construct engineering model where paper space used to print or draw engineering model.

j. Units

The units command open dialog box to determine measurement units for drawing angles and direction and precision. Access the command by:

- *Menu bar ⇨ format ⇨ units*
- **Length type**. Determine length types (scientific, decimal, engineering, architectural, and fractional).
- **Angle type**. Determine angle type. (The default decimal degree).
- **Precision**. Determine accuracy of angles and lengths. Precision is the number of places to the right of the decimal to display.
- **Clockwise.** Control angle direction.
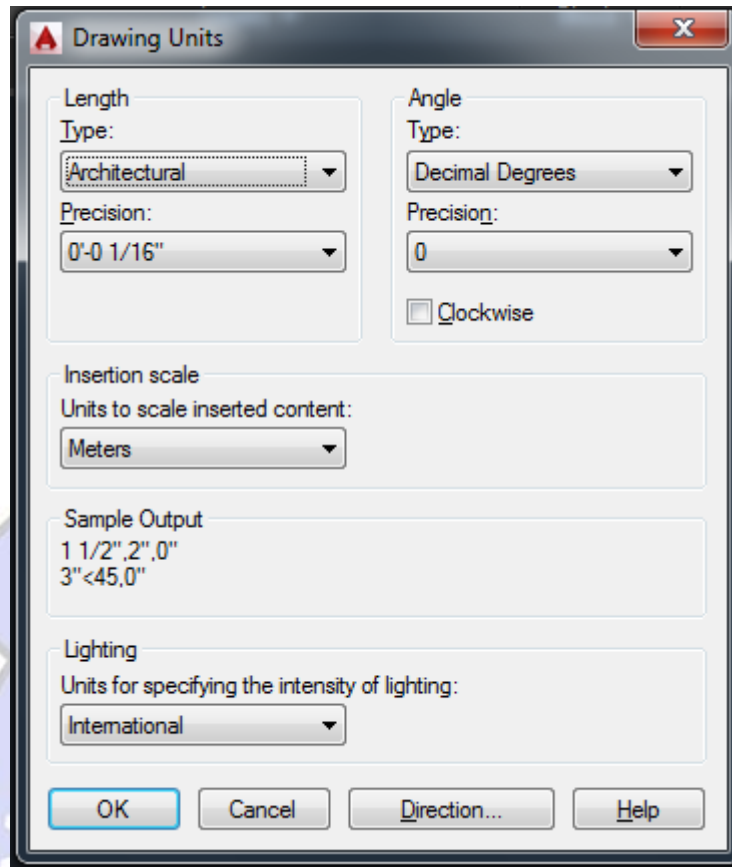
k. Limits

Limits used to determine the limits of board. To access the command by:

Menu bar ⇨ *format* ⇨ *Drawing limits*

Specify lower left corner or [on / off] <0.0000, 0.0000>:

Specify upper right corner <420,297>:

1.3. Cartesian and polar 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. Polar coordinates use a distance and an angle to locate a point. With both