

---

**Chapter 14**  
**Advanced Display Commands**

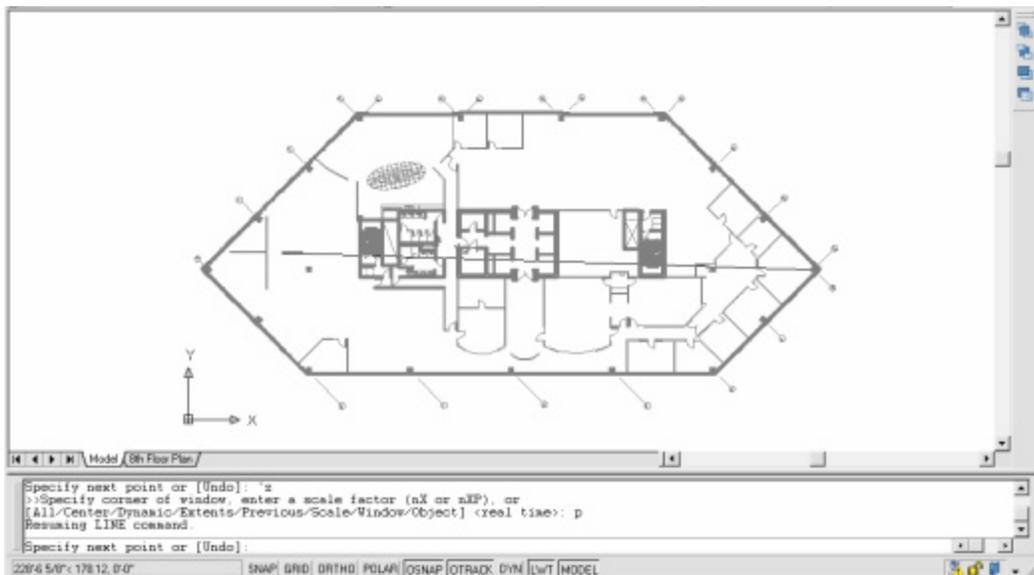
---

# AutoCAD 2D Tutorial

## Transparent Commands 14.1

Transparent commands are those started while another is in progress. Precede transparent commands with an apostrophe.

- Type** LINE at the command prompt.  
Command: **LINE**  
Specify first point: **(pick point)**  
Specify next point or [Undo]: **'zoom**  
>>Specify corner of window, enter a scale factor (nX or nXP), or  
[All/Center/Dynamic/Extents/Previous/Scale/ Window]  
<real time>: **(pick corner)**  
>>>>Specify opposite corner: **(pick other corner)**



### TIP:

Commands that do not select objects, create new objects, or end the drawing session usually can be used transparently.

# AutoCAD 2D Tutorial

---

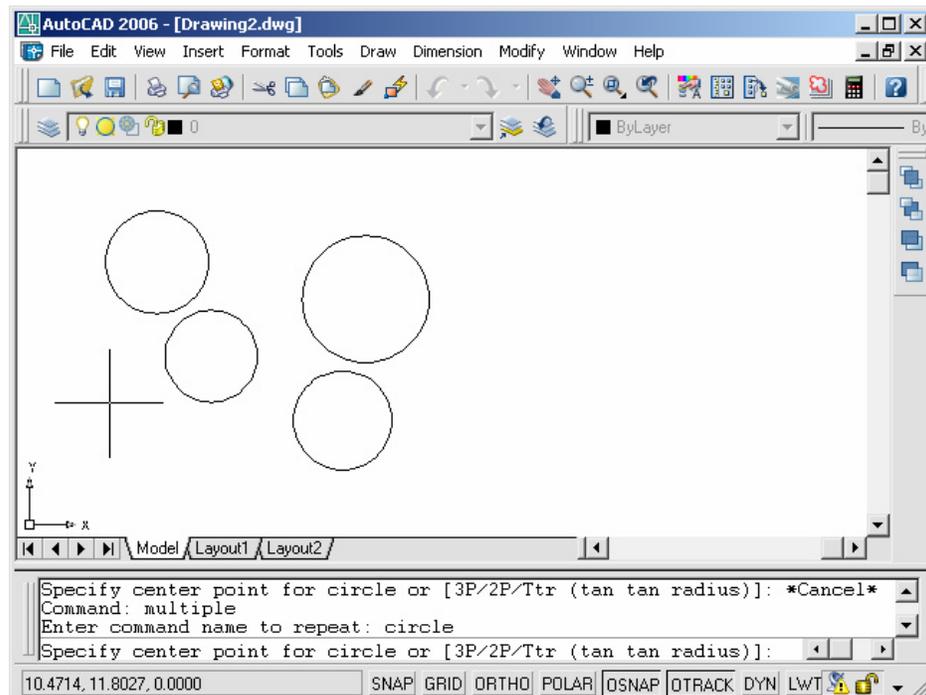
## Multiple Command 14.2

Multiple repeats the specified command until canceled

If you want to repeat a command that you have just used, press ENTER or SPACEBAR, or right-click your pointing device at the Command prompt.

You also can repeat a command by entering multiple, a space, and the command name, as shown in the following example:

1. **Type**                    **MULTIPLE** before each command  
                                 **Command: multiple circle**



# AutoCAD 2D Tutorial

---

## Advanced Calculator Function 14.3

Evaluates mathematical and geometric expressions

1. **Type** CAL at the command prompt. Command: **cal**  
(or **'cal**) Initializing...>>  
Expression: **1+1**  
**2**

### Numeric operators

- ( ) Groups expressions
- ^ Indicates exponentiation
- \*, / Multiplies, divides
- +, - Adds, subtracts

### Vector operators

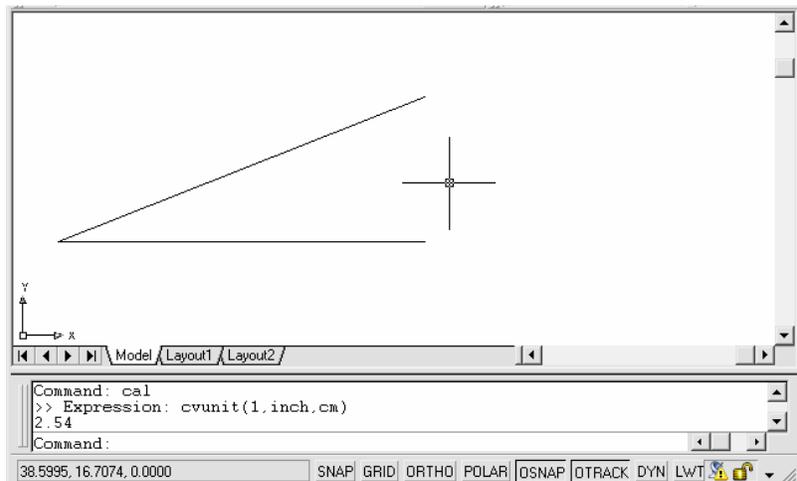
- ( ) Groups expressions
- & Determines the vector product of vectors (as a vector)  
 $[a,b,c]&[x,y,z] = [ (b*z) - (c*y) , (c*x) - (a*z) , (a*y) - (b*x) ]$
- \* Determines the scalar product of vectors (as a real number)  
 $[a,b,c]*[x,y,z] = ax + by + cz$
- \*, / Multiplies, divides a vector by a real number a\*  
 $[x,y,z] = [a*x,a*y,a*z]$
- +, - Adds, subtracts vectors (points)  
 $[a,b,c] + [x,y,z] = [a+x,b+y,c+z]$

# AutoCAD 2D Tutorial

---

Converts units of measure

- Type** CAL at the command prompt.  
Command: **cal(or 'cal)**  
Initializing...>> Expression: **cvunit(1,inch,cm)**  
**2.54**



Determines Angles

- Type** CAL at the command prompt.  
Command: **cal(or 'cal)**  
Initializing...>> Expression: **ang(end,end,end)**  
**45**