

LESSON 6

LEARNING OBJECTIVES

After completing this lesson, you will be able to:

1. Use the Break Command.
2. Trim objects to other objects.
3. Extend objects to other objects.
4. Move an object to a new location.
5. Explode objects to their primitive entities.

Break

The **Break** command allows you to break an object at a single point (Break at Point) or between two points (Break). I think of it as breaking a single line segment into two segments or taking a bite out of an object.

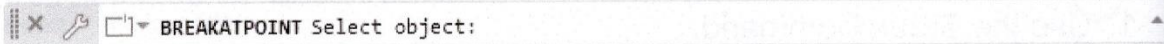
Method 1: Break at a Single Point

How to break one line into two separate objects with no visible space in between.

1. Select the **Break at Point** command by using:

Ribbon = Home Tab / Modify Panel ▾ / 

The following prompt will appear on the Command Line:

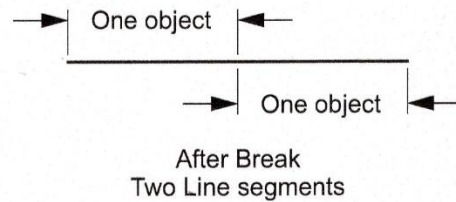
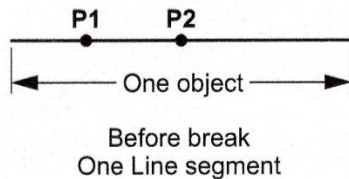


2. Select the object to break (**P1**).

The following prompt will appear on the Command Line:



3. Select the break location (**P2**) accurately.




Note: The single line is now two lines, but there is no gap in between the two lines. For example, if you break a 2 inch long line at its center, it would become two 1 inch lines butted together.

Method 2: Break between two Points

Take a bite out of an object. Use this method if the **location** of the break is **not important**.

1. Select the **Break** command using one of the following:

Ribbon = Home Tab / Modify Panel ▾ / 

or

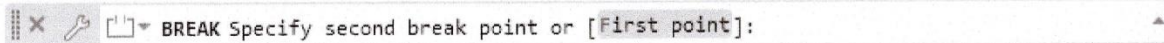
Keyboard = **BR** <Enter>

The following prompt will appear on the Command Line:



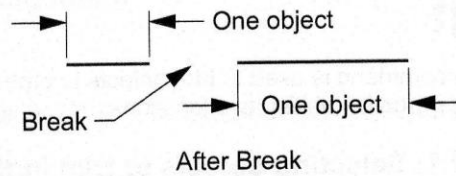
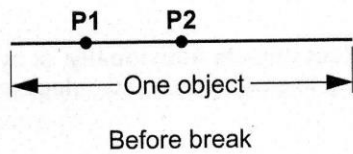
2. Pick the first break location (**P1**).

The following prompt will appear on the Command Line:



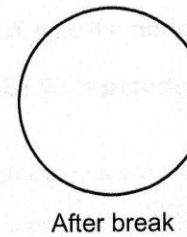
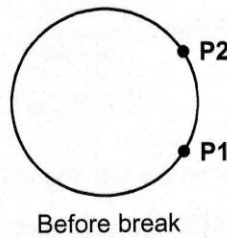
3. Pick the second break location (**P2**).

Continued on the next page...



Note:

- A. Circles break counter-clockwise (ccw).
- B. Circles cannot be broken with one point. You must use two points.



Method 3: Break between two Points

The following method is the same as Method 2 above; however, use this method if the location of the break is **very specific**.

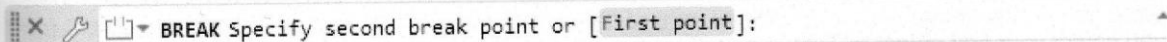
1. Select the **Break** command.

The following prompt will appear on the Command Line:



2. Select the object to break (**P1**) anywhere on the object.

The following prompt will appear on the Command Line:



3. Type **F** and then press **<Enter>**.

The following prompt will appear on the Command Line:

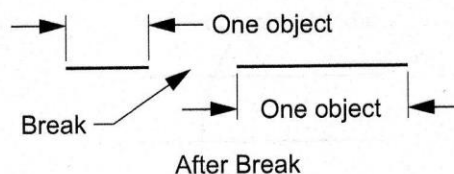
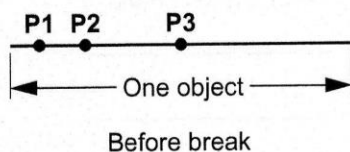


4. Select the first break location (**P2**) accurately.

The following prompt will appear on the Command Line:



5. Select the second break location (**P3**) accurately.



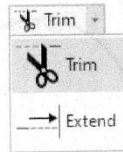
Trim

The **Trim** command is used to trim objects to other objects. You can **select objects individually**, or by using a **crossing fence** by picking two locations, or you can use **press and drag** to start a **freehand selection path**.

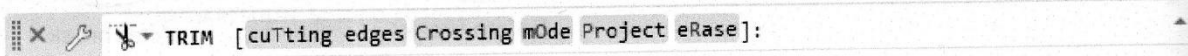
Method 1: Selecting objects to trim individually

1. Select the **Trim** command using one of the following:

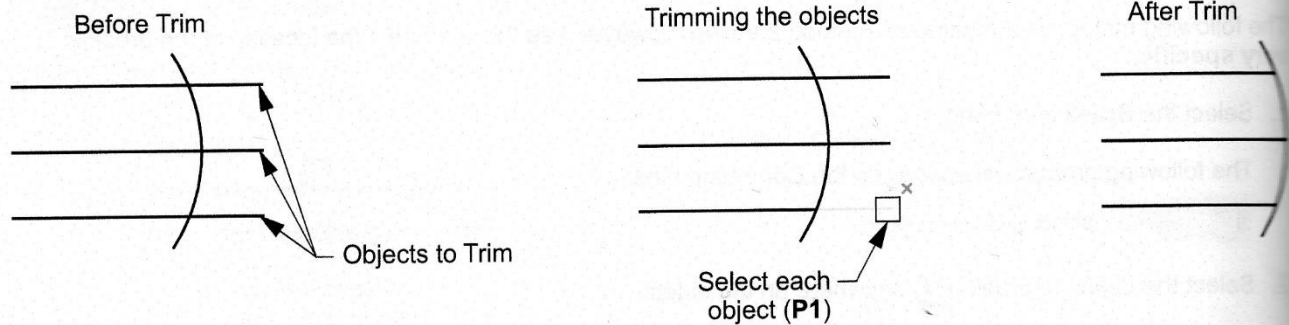
Ribbon = Home Tab / Modify Panel /
or
Keyboard = TR <Enter>



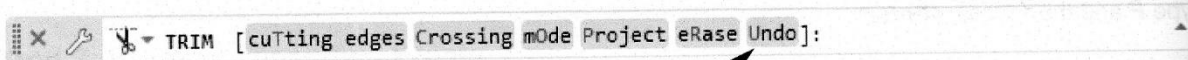
The following prompt will appear on the Command Line:



2. Select the object that you want to trim (**P1**).



After you select your first object to Trim, a new Command Line will appear.



If you have trimmed an object by mistake, you can use the **Undo** command to “undo” the trimmed object and place it back to its original length before it was trimmed.

How to use the Undo command during Trim

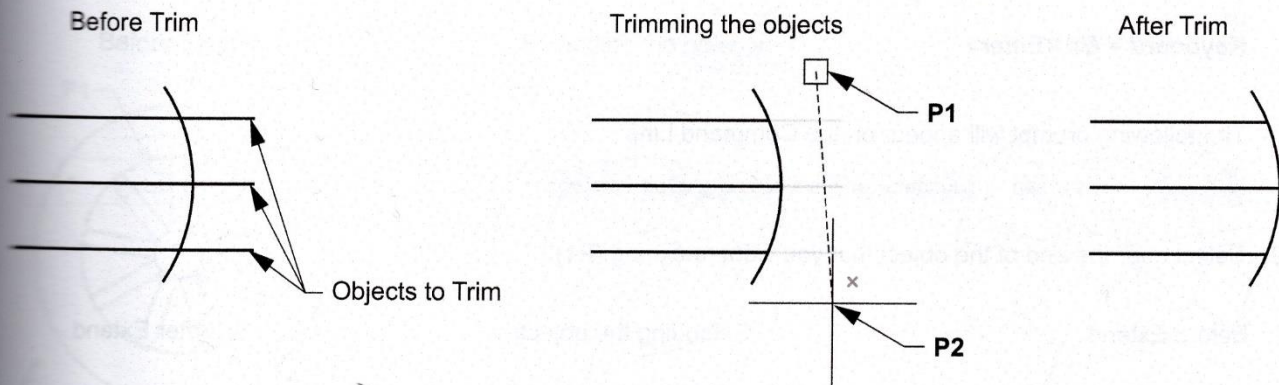
1. Type **U** and then press **<Enter>**.
2. The last object you trimmed will reappear.



Method 2: Selecting objects to trim using a crossing fence

1. Select the **Trim** command.
2. Select the objects that you want to trim by selecting the first point at (**P1**), by left clicking and then releasing the mouse button.
3. Select a second point at (**P2**). Again, left click and release.

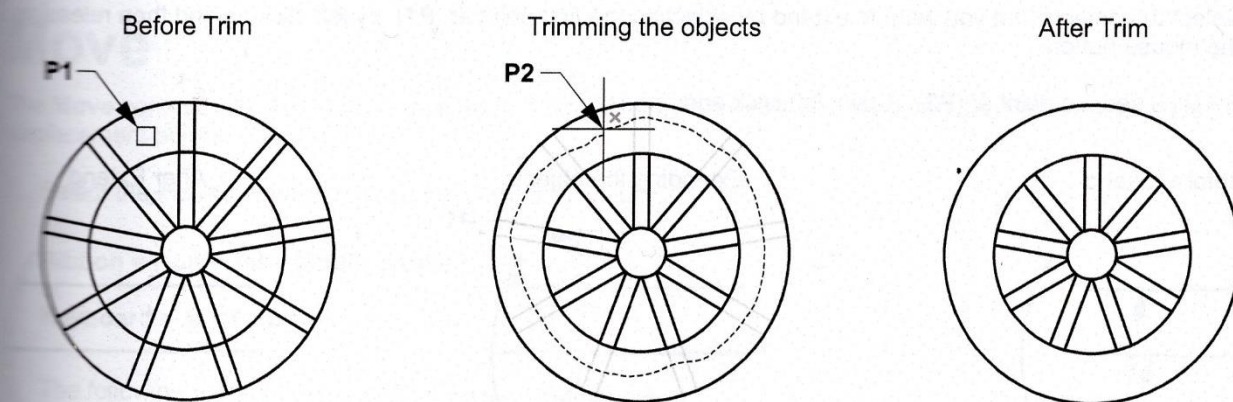
Note: You will see a dashed fence line when moving the cursor to (**P2**).



Method 3: Selecting objects to trim using a press and drag freehand path

1. Select the **Trim** command.
2. Select the objects that you want to trim by selecting the first point at (**P1**), by left clicking and **holding down** the mouse button, but **do not** release it yet.
3. Drag the cursor around the area of the objects you wish to trim, to (**P2**), then release the left mouse button.

Note: You will see a dashed fence line when dragging the cursor around the objects. In the example below, you could drag the cursor clockwise or counter-clockwise, whichever way you prefer.



The lines in between the two outer circles need to be trimmed.

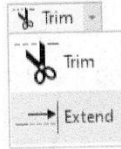
Extend

The **Extend** command is used to extend objects to other objects. You can **select objects individually**, or by using a **crossing fence** by picking two locations, or you can use **press and drag** to start a **freehand selection path**.

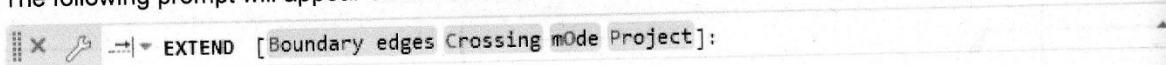
Method 1: Selecting objects to extend individually

1. Select the **Extend** command using one of the following:

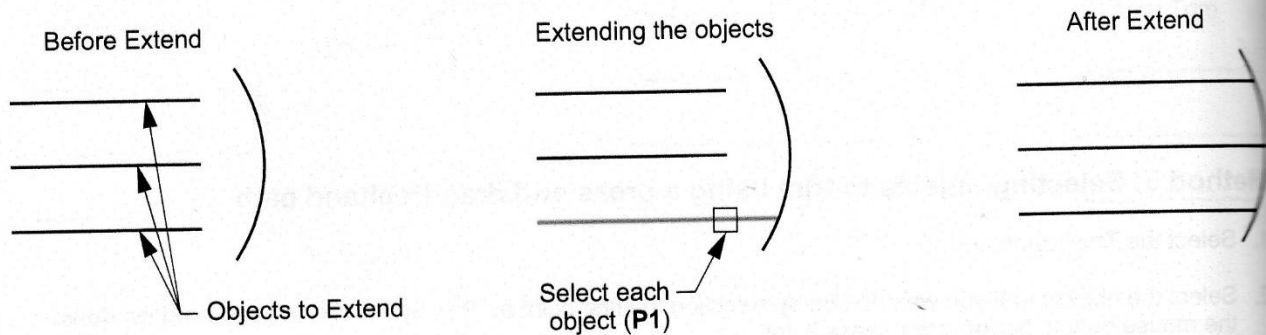
Ribbon = Home Tab / Modify Panel /
or
Keyboard = EX <Enter>



The following prompt will appear on the Command Line:



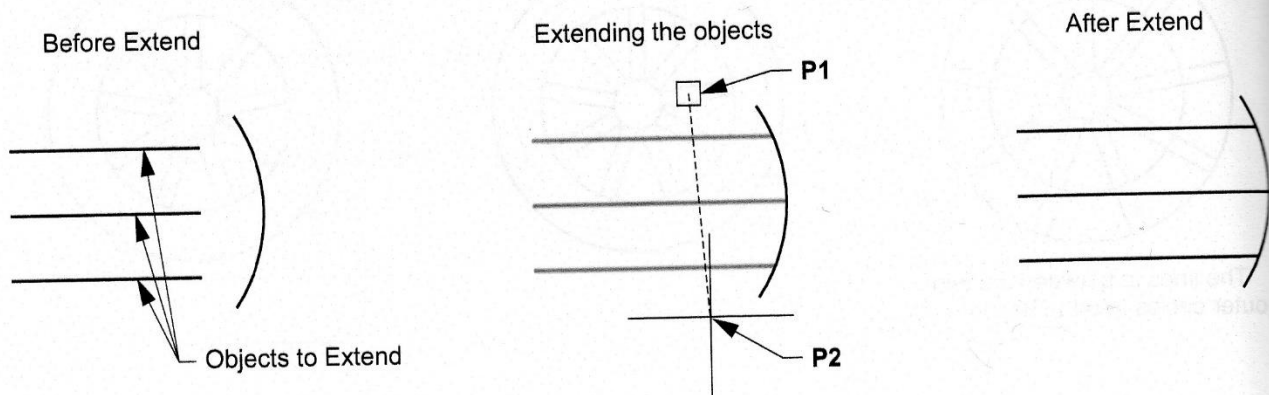
2. Select near the end of the object that you want to extend (**P1**).



Note: Make sure you select the object near the end you want to extend. If you select the other end, AutoCAD will try to find another object to extend to.

Method 2: Selecting objects to extend using a crossing fence

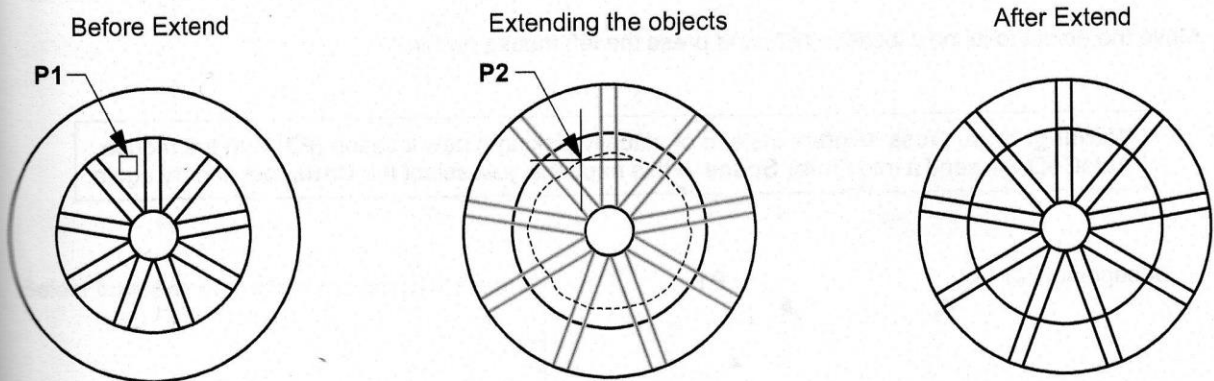
1. Select the **Extend** command.
2. Select the objects that you want to extend by selecting the first point at (**P1**). by left clicking and then releasing the mouse button.
3. Select a second point at (**P2**). Again, left click and release.



Method 3: Selecting objects to extend using a press and drag freehand path

1. Select the **Extend** command.
2. Select the objects that you want to extend by selecting the first point at (**P1**), by left clicking and **holding down** the mouse button, but **do not** release it yet.
3. Drag the cursor around the area of the objects you wish to extend, to (**P2**), then release the left mouse button.

Note: You will see a dashed fence line when dragging the cursor around the objects. In the example below, you could drag the cursor clockwise or counter-clockwise, whichever way you prefer.



All the lines need to be extended to the outer circle.

Note: In the example above, if your freehand path was closer to the smaller inner circle, AutoCAD will extend the lines inside that inner circle instead of extending them to the outer circle.

Note: If you extend an object by mistake, you can use the **Undo** command to “undo” the extended object and place it back to its original length before it was extended. (Refer to page 6-4.)



You may toggle between **Extend** and **Trim** (page 6-4). Hold down the **<Shift>** key and the **Trim** command will activate. Release the **<Shift>** key and you return to **Extend**.

Move

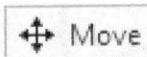
The **Move** command is used to move object(s) from their current location (basepoint) to a new location (second displacement point).

1. Select the **Move** command using one of the following:

Ribbon = Home Tab / Modify Panel /

or

Keyboard = **M** <Enter>



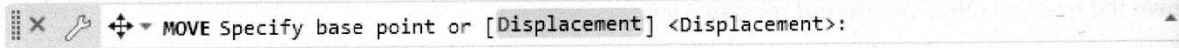
The following prompt will appear on the Command Line:



Continued on the next page...

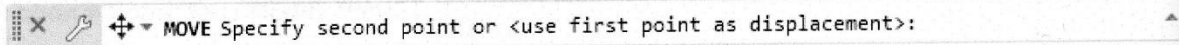
2. Select the object(s) that you want to move (**P1**).
3. Select more objects or to stop selecting objects, select **<Enter>**.

The following prompt will appear on the Command Line:



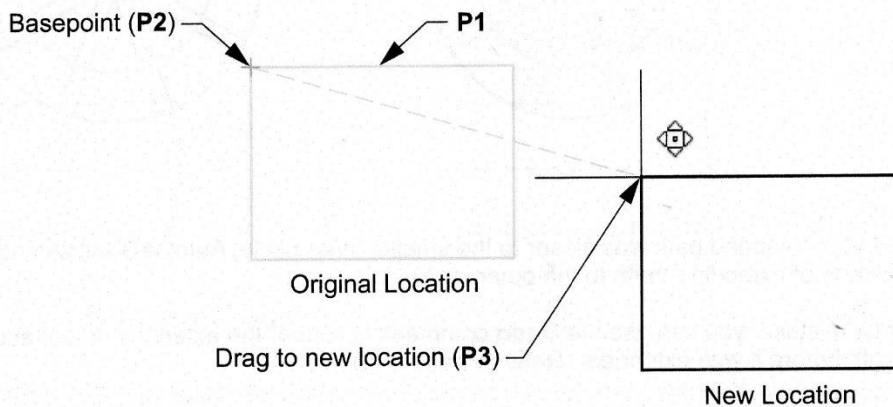
4. Select a location (**P2**) (usually a point on the object).

The following prompt will appear on the Command Line:



5. Move the object to its new location (**P3**) and press the left mouse button.

Warning: If you press **<Enter>** instead of actually picking a new location (**P3**) with the mouse, AutoCAD will send it into **Outer Space**. If this happens, just select the **Undo** tool and try again.



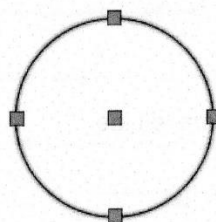
Drag

The **Drag** option allows you to quickly **move** or **copy** one or more objects.

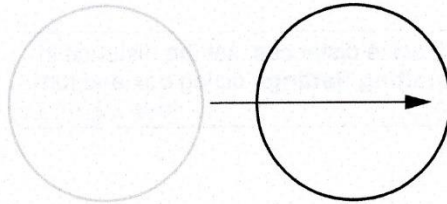
Example:

1. Draw a circle.
2. Select the circle.

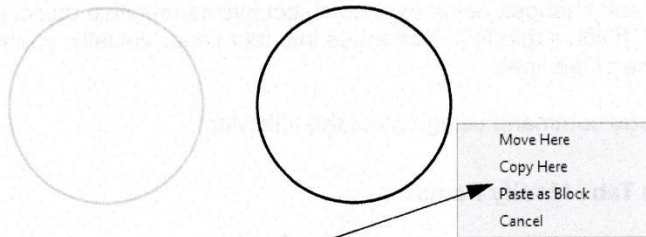
Five little boxes appear. These are called grips and allow you to edit the object. Grips will be discussed more in future lessons.



3. Click on the circle and hold the right-hand mouse button down as you drag the circle to the right.



4. When the dragged circle is in the desired location, release the right mouse button.



5. Select from any of the four options in the menu.

Nudge

The **Nudge** option allows you to nudge objects in orthogonal increments.

Note: Snap mode affects the distance and direction in which the objects are nudged.

Nudge objects with **Snap** mode turned **off**: Objects move two pixels at a time.

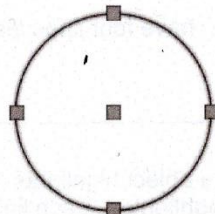
Nudge objects with **Snap** mode turned **on**: Objects are moved in increments specified by the current **Snap** spacing.

- **Note:** To set the Increment Snap spacing refer to page 3-5.

Example:

1. Draw a circle.
2. Select the circle.

Five little boxes appear. These are called grips and allow you to edit the object. Grips will be discussed more in future lessons.



3. Hold down the **<Ctrl>** key and press one of the Arrow keys ← → ↑ ↓

Remember: The distance the object moves depends on whether you have the **Snap** mode **on** or **off**. (Refer to the note on the previous page.)




If you want to nudge an object precise distances, set the distance in the **Snap** and **Grid** Tab of the **Drafting Settings** dialog box and turn on **Snap** mode **<F9>**.

Explode

The **Explode** command changes (explodes) an object into its primitive objects. For example, a rectangle is originally one object. If you explode it, it changes into four lines. Visually, you will not be able to see the change unless you select one of the lines.

1. Select the **Explode** command using one of the following:

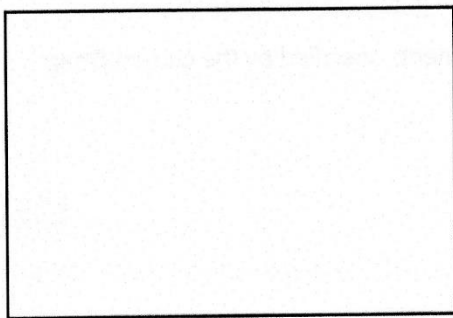
Ribbon = Home Tab / Modify Panel / 
 or
Keyboard = X <Enter>

The following prompt will appear on the Command Line:



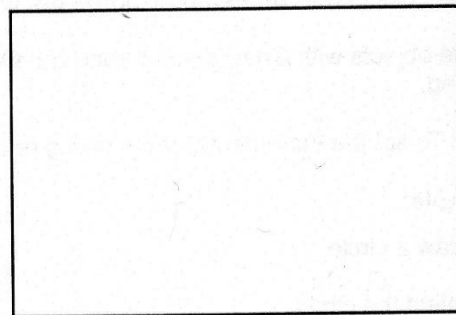
2. Select the object(s) you want to explode and then press **<Enter>**.

Before Explode



One Object
(Rectangle)

After Explode



Four Objects
(Four Lines)

(Notice there is no visible difference. But now you have four lines instead of one rectangle).

Try this:

Draw a rectangle and then click on it. The entire object highlights. Now explode the rectangle, then click on it again. Only the line you clicked on should be highlighted. Each line that forms the rectangular shape is now an individual object.