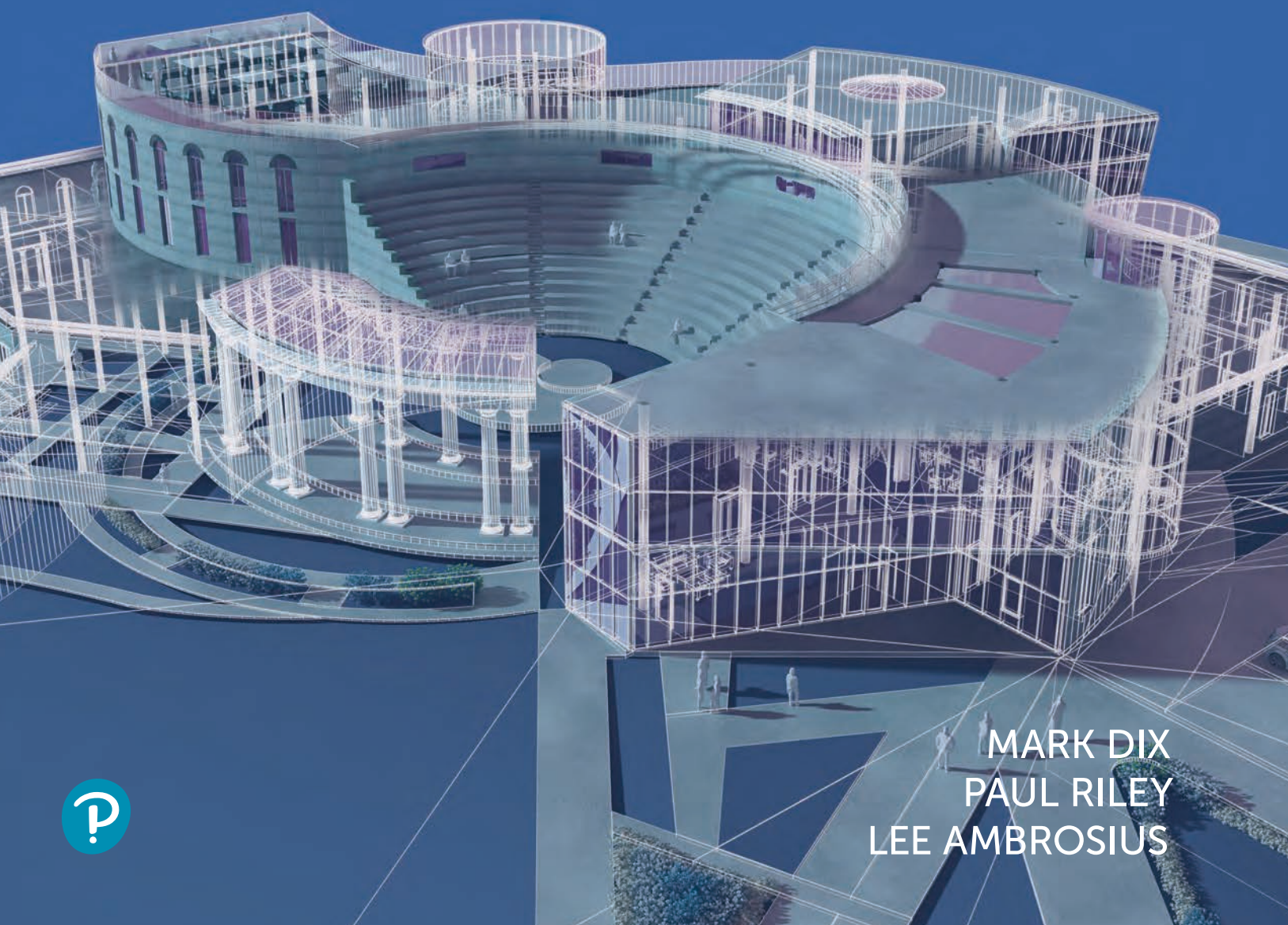
DISCOVERING AutoCAD® 2024



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NOTE

Remember the following steps:

1. Right-click the **Object Snap** button on the status bar.
2. Select **Object Snap Settings**.
3. Click **Clear All** in the dialog box.
4. Check **Endpoint**.
5. Click **OK**.

- ✔ Click the **Dynamic Input** button to turn dynamic input off.
  This is technically not necessary, but you will be able to see other things happening more easily with the dynamic input display turned off.
- ✔ Click the **Object Snap Tracking** button (next to the **Object Snap** button) on the status bar so that it is on.
- ✔ Enter the **LINE** command.
- ✔ Select a first point to the left of the square and circle, as shown by point 1 in Figure 6-7.

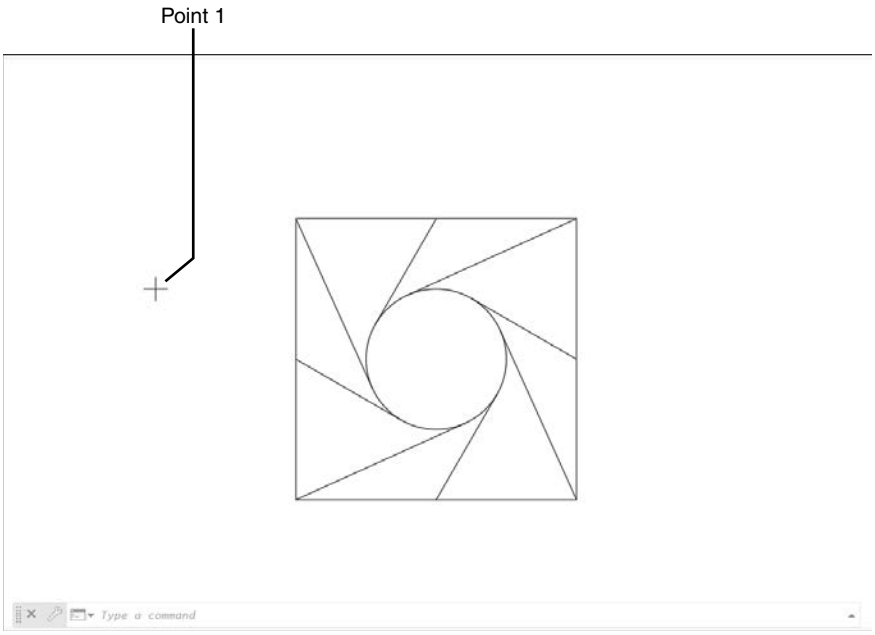


Figure 6-7
Selecting point 1

Point Acquisition

point acquisition: The process by which object snap points are acquired for use in object snap tracking. An acquired point is marked by a small green cross.

To take the next step, you need to learn a new technique called ***point acquisition***. Before a point can be used for object snap tracking, it must be acquired, which is a form of selection. To acquire a point, move the cursor over it so that the object snap marker appears, and pause for about a second without clicking. Try it with the following steps:

- ✔ Move the cursor over the lower-left corner of the square, point 2 in Figure 6-8, so that the endpoint object snap marker appears, but do not click to snap to the corner of the square.

✔ Pause.

✔ Now, move the cursor away from the corner.

If you have done this correctly, a small green cross appears at the corner intersection, as shown in Figure 6-9, indicating that this point has been acquired for object snap tracking. (Repeating this procedure over the same point removes the cross.)

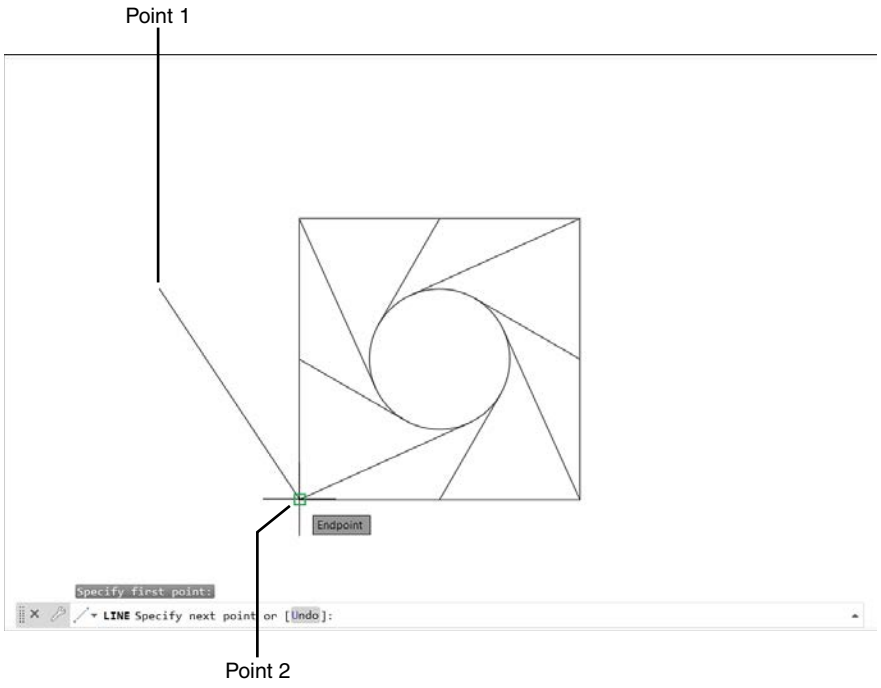


Figure 6-8
Endpoint marker

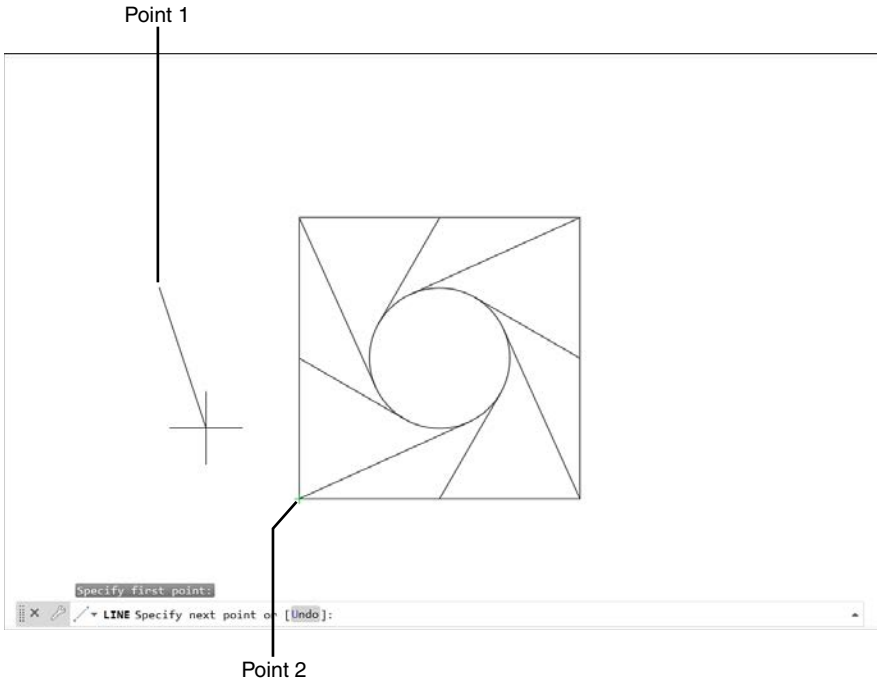


Figure 6-9
Acquired point

✔ Move the cursor to a position left of point 2 and even with the horizontal lower side of the square, as shown in Figure 6-10.

You see a horizontal alignment path and a tracking tip like those shown in Figure 6-10.

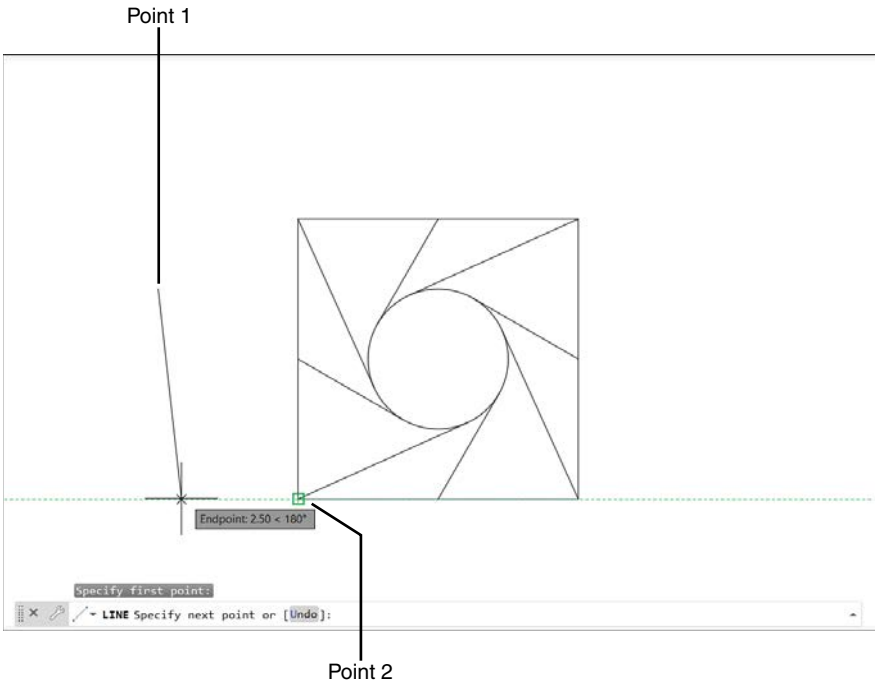


Figure 6-10
Horizontal alignment path and tracking tip

✔ Move the cursor over and down to a position even with and below the vertical left side of the square, as shown in Figure 6-11.

You see a vertical alignment path and tracking tip like those shown in Figure 6-11.

These paths are interesting, but they do not accomplish a great deal because your square is constructed on grid snap points anyway. Let's try something more difficult and a lot more interesting. Here, you use two acquired points to locate a point that currently is not specifiable in either object snap or incremental snap.

✔ Move the cursor up and acquire point 3, as shown in Figure 6-12.

Point 3 is the lower endpoint of the line previously drawn from the midpoint of the top side of the square to a point tangent to the circle. You should now have two acquired points with two green crosses showing: one at point 2 and one at point 3.

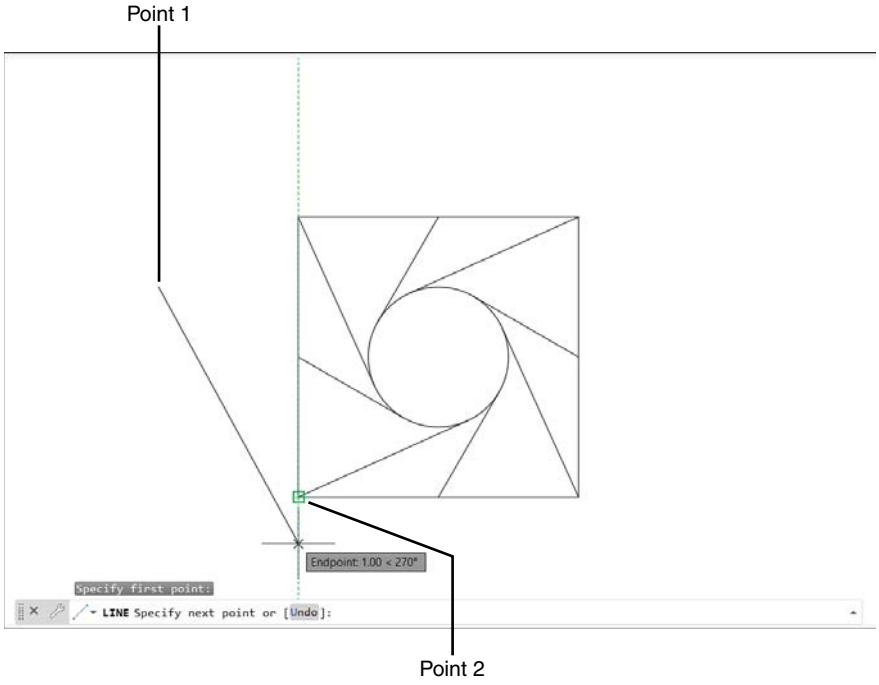


Figure 6-11
Vertical alignment path

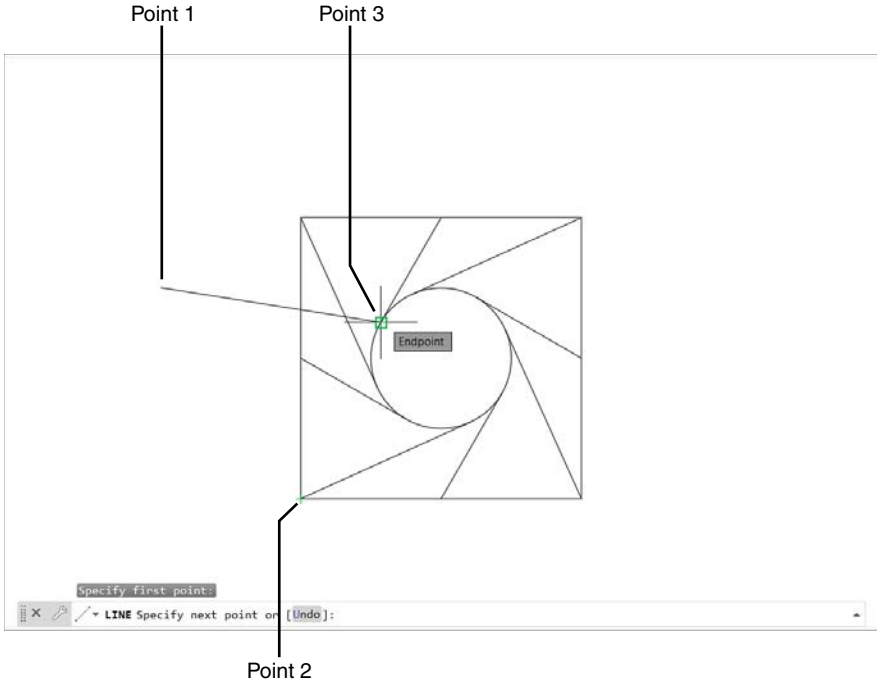


Figure 6-12
Acquiring point 3

✔ Move the cursor slowly along the left side of the square.

You are looking for point 4, the point where the vertical alignment path from point 2 intersects the horizontal path from point 3. When you approach it, your drawing area should resemble Figure 6-13. Notice the double tracking tip, ***Endpoint: <90, Endpoint: <180****.*

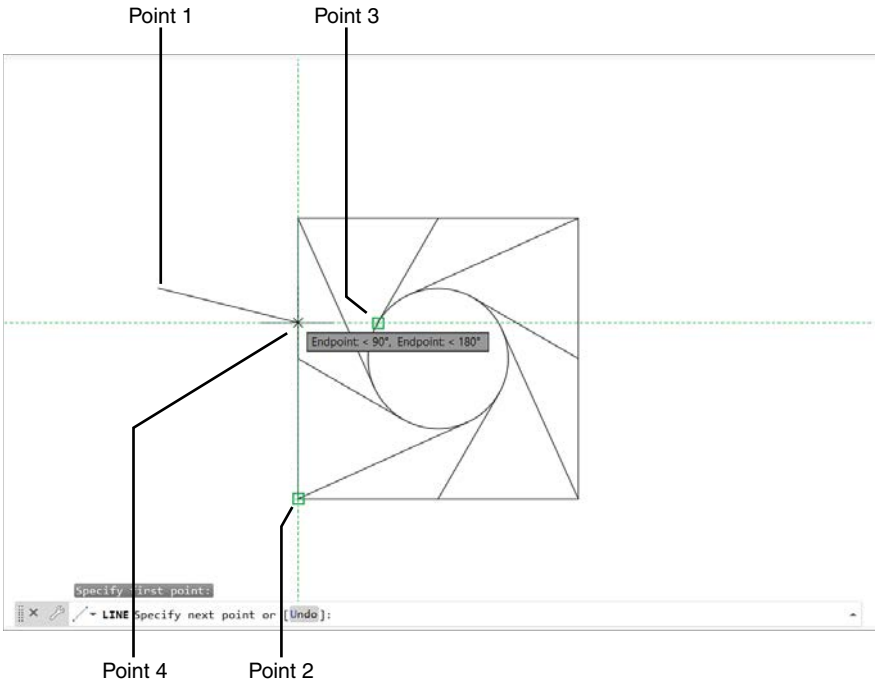


Figure 6-13
Double tracking tip

✔ With the double tracking tooltip and the two alignment paths showing, click in the drawing area.
A line is drawn from point 1 to point 4.

✔ Press **<Enter>** or the spacebar to exit the **LINE** command.
Before going on, you need to turn off the running object snap mode.

✔ Click the **Object Snap** button or press **<F3>** to turn off running object snap mode.

If you have followed this exercise closely, you have already greatly increased your understanding of CAD techniques. You will find many opportunities to use object snap and object snap tracking from now on.

Next, you move on to a very powerful editing command called **OFFSET**. Before leaving object snaps behind for now, be sure you have studied the chart in Figure 6-6, which shows examples of all the object snap modes.

Using the OFFSET Command (Creating Parallel Objects with OFFSET)

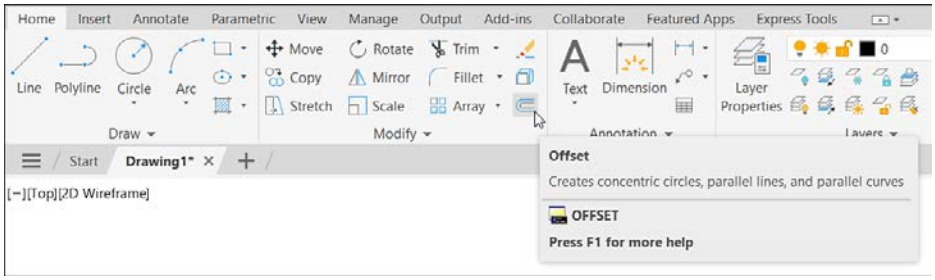
OFFSET	
Command	OFFSET
Alias	O
Panel	Modify
Tool	

OFFSET is one of the most useful editing commands in AutoCAD. With the combination of object snap and the **OFFSET** command, you can become completely free of incremental snap and grid points. Any point in the drawing space can be precisely located. Essentially, **OFFSET** creates parallel copies of lines, circles, arcs, or polylines. You can find a number of typical applications in the drawings at the end of this chapter. In this brief exercise, you perform an offset operation to draw some lines through points that would be very difficult to locate without **OFFSET**.

✔ Click the **Offset** tool from the **Modify** panel on the ribbon's **Home** tab, as shown in Figure 6-14. AutoCAD prompts:

```
Specify offset distance or [Through/Erase/Layer] <Through>:
```

Figure 6-14
Offset tool



✔ *To specify an offset distance, you can type a number, define a distance with two points, or specify a point you want the new copy to run through (**Through** option). The **Erase** option allows you to specify whether the selected object should be retained or erased when the new offset object is drawn. The **Layer** option enables you to create the new object on the selected object's layer instead of the current layer.*

✔ Type **.257 <Enter>**.

This rather odd number was chosen to make the point that this command can help you locate positions that would be difficult to find otherwise. AutoCAD prompts for an object:

```
Select object to offset or <exit>:
```

✔ Select the diagonal line drawn in the last exercise.

AutoCAD creates a preview offset, but needs to know whether to create the offset image above or below the line:

```
Specify point on side to offset:
```

✔ Specify a point anywhere below the line.

Your drawing should now resemble Figure 6-15. AutoCAD continues to prompt for objects to offset using the same offset distance. You can continue to create offset objects at the same offset distance by pointing and clicking.

✔ Select the line just created.

✔ Specify any point below the line.

*A second offset line is added, as shown in Figure 6-15. As long as you stay within the **OFFSET** command, you can select any object to offset using the same offset distance.*

✔ Select the circle in the square.

✔ Specify any point inside the circle.

An offset circle is added, as shown in Figure 6-16.

✔ Continue selecting and clicking to create additional offset circles, as shown in Figure 6-16.