

Assignment 6

CAD Mechanical – Part 1

Editing Tools

Objectives

In this assignment you will apply the **explode** and **rectangular array** commands, as well as skills learned in earlier assignments.

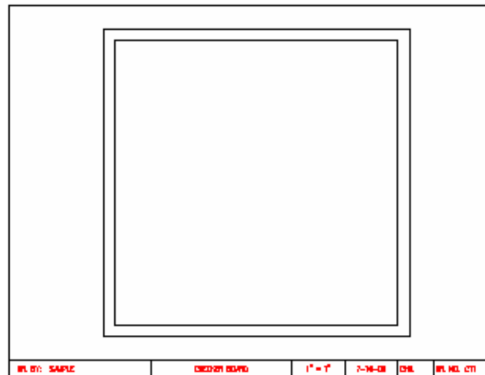
Getting Started

1. When AutoCAD's menu appears, scroll down and select the **Otto 2016.dwt** template file as you have on the previous assignments.
 2. Insert the title block and type the information into the block. The drawing will be drawn **full scale**.
 3. Insert the drawing title and drawing number illustrated below:
- | | |
|--------------|-----|
| Checkerboard | C11 |
|--------------|-----|
4. Dimension the **assignment after drawing the checker board**.

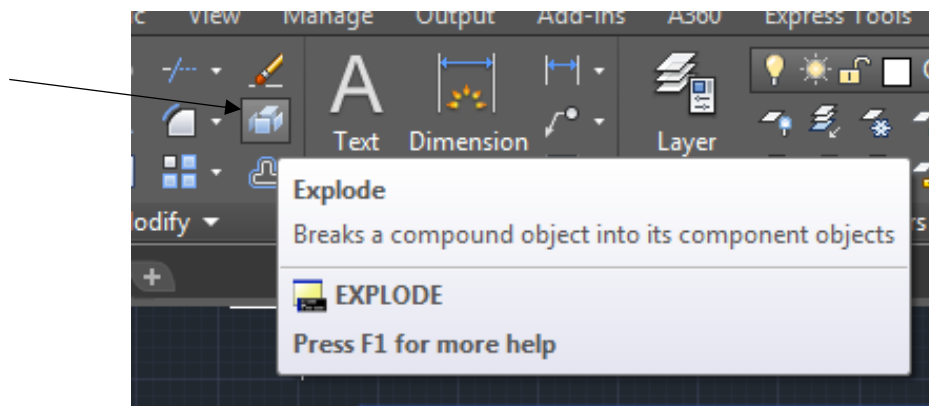
Note: If a pop ask for you to make a selection, choose the one that is recommended.

Polyline and Explode

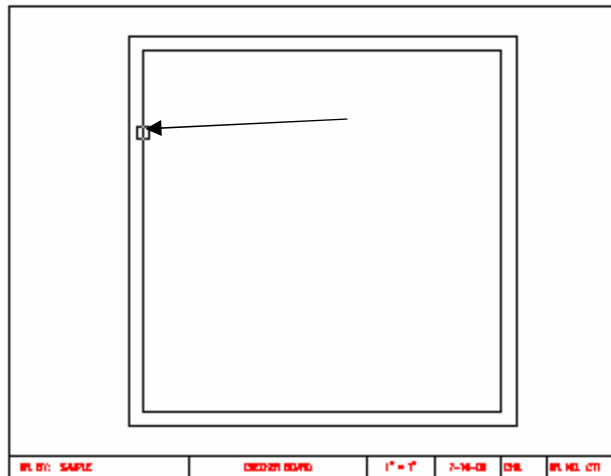
1. After the border appears and you have changed to the object layer, begin drawing the 6 ½” square using the **Polyline** command. Use the **Offset** command to draw the inside square (1/4” to the inside).



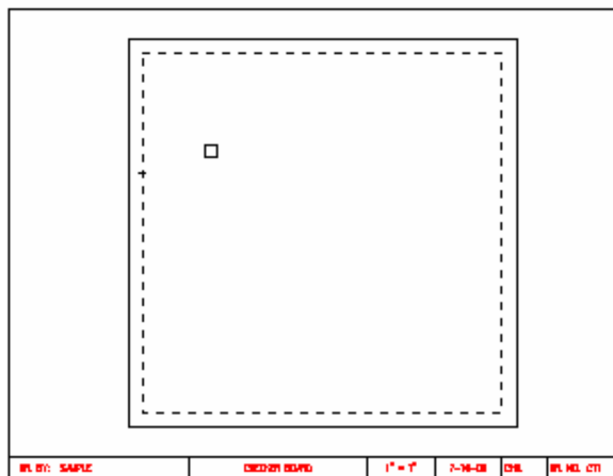
2. Using the **Home Ribbon** menu, select **explode**.



- Position the pick box on the inside square.



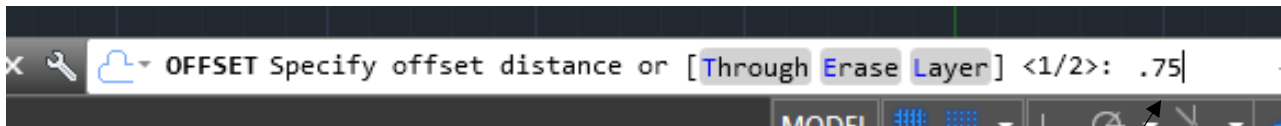
- When you **click** the **mouse**, the **command** lines indicates that **one object** was **found**. Remember the **polyline** might be **four lines** but it is **however** only **one object**.



- Press the **Enter** key **one time**. The **inside square** is **no longer selected**. The **inside square** also is **not one object anymore**. It is only **four lines**. Explode command **breaks** a **grouped object** into **separate lines**.

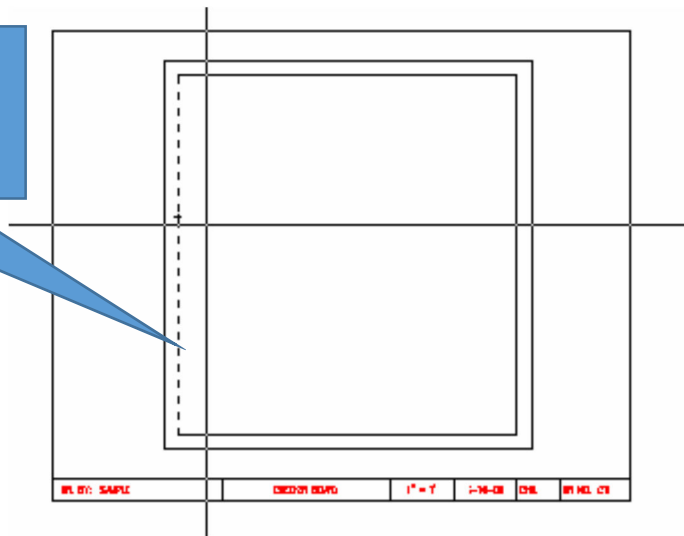
Offsetting the Horizontal and Vertical Squares

1. When you use the **offset** command this time, it will copy individual lines as opposed to copying an entire square.
2. Use the **Offset command** and enter **3/4"** for the offset distance. **Position the pickbox** on the **inside vertical** line on the left and then copy **each vertical line 7 times** until they are **all copied**.

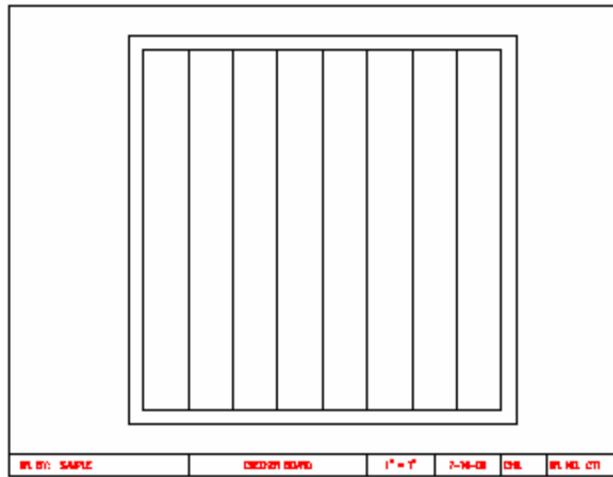


Note: Remember that each time you offset a line you first select the line and then move to the right to copy the line. Remember to type the distance of $\frac{3}{4}$ " on the first offset.

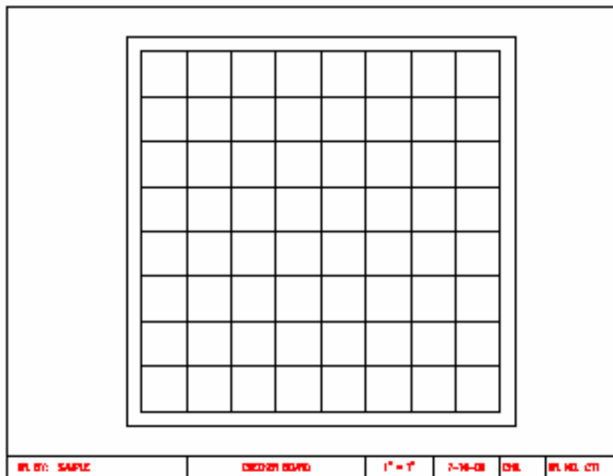
Offset this line first and position crosshair to the right side of the line to pick the location



3. **Continue offsetting** each **line** until all of the **vertical** lines are **copied** as illustrated below:

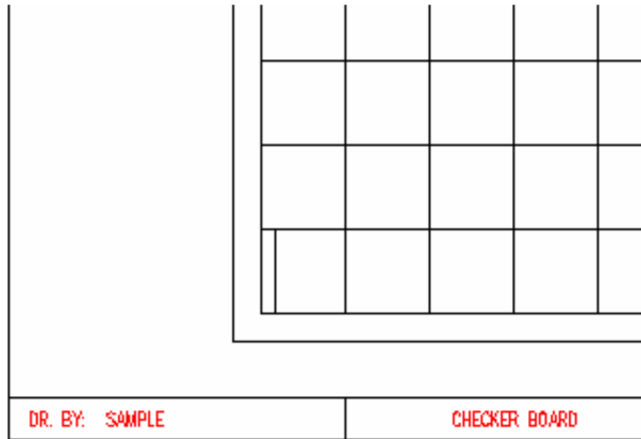


4. Continue the same procedure for copying the **horizontal** lines for the checker squares. The **offset** distance is **still 3/4"**. Copy the **seven lines** as illustrated:



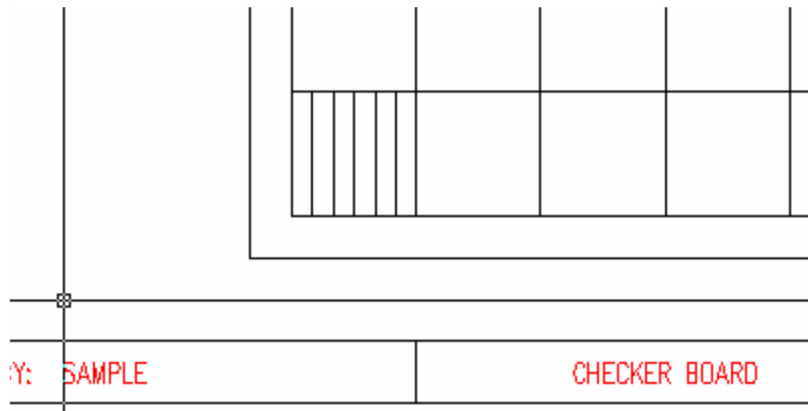
Creating the Dark Squares

1. As you can see it would be difficult to play checkers without having the dark squares. You are going to **draw one line** in the **first square 1/8"** to the inside of the **lower left** square of the **checkerboard**.

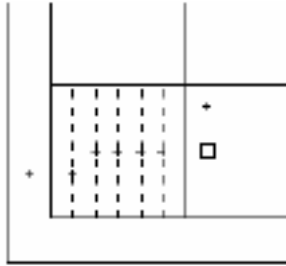


Note: Be sure that the snap is set to 1/8" before drawing the line

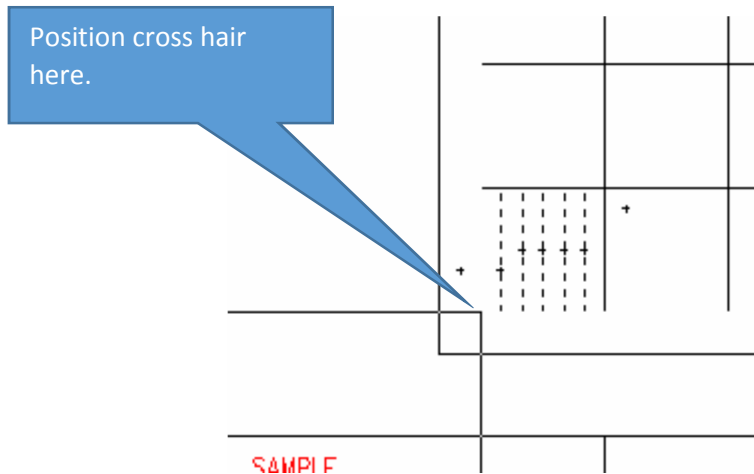
2. Select the **Copy** command from the **Modify menu**, and pick the line that you just drew. **Copy the line four times** until all of the **lines** are in the square.



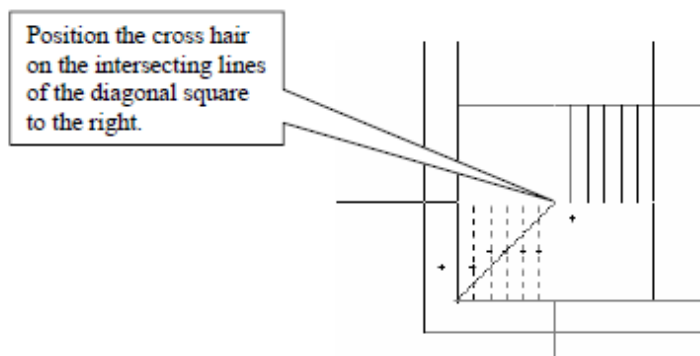
3. Select the **Copy** command again, and **pick** only the **five inside** lines as illustrated:



4. Press the **Enter** key after **selecting** the lines and position the **base point** for the copy as illustrated:



5. Move the **copied lines** to this **location**:

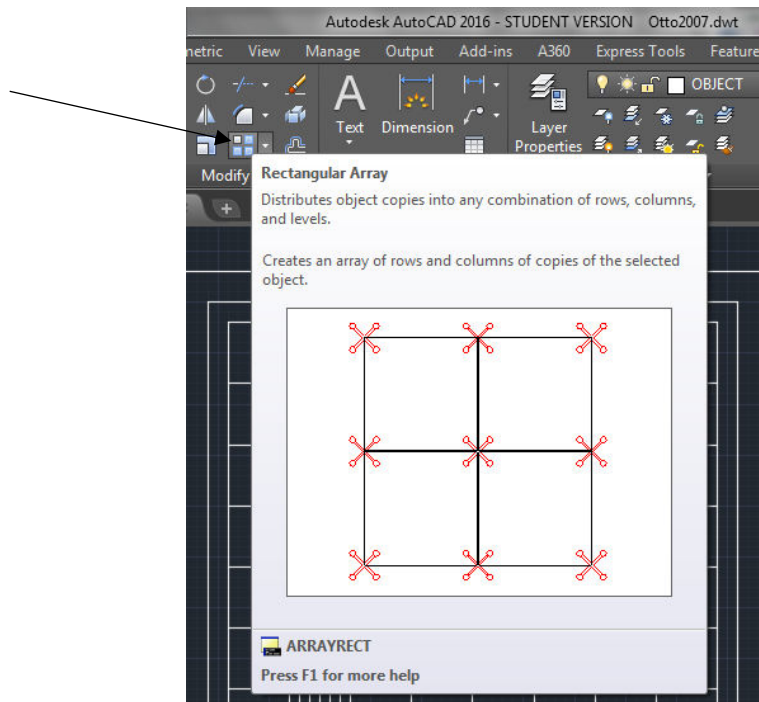


Note: Remember to turn ortho off before you drag the copies to the new location:

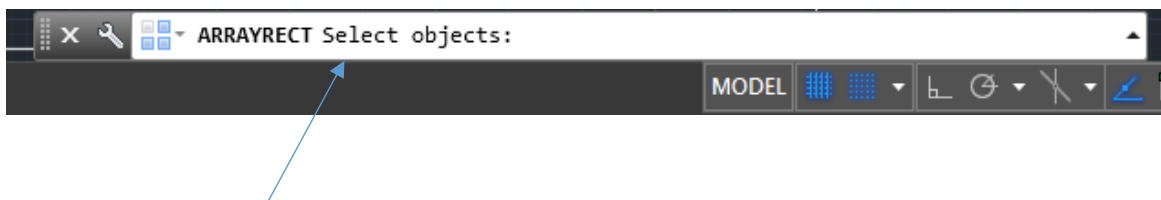
6. When you pick this intersection the five lines will be copied.

Rectangular Array Command

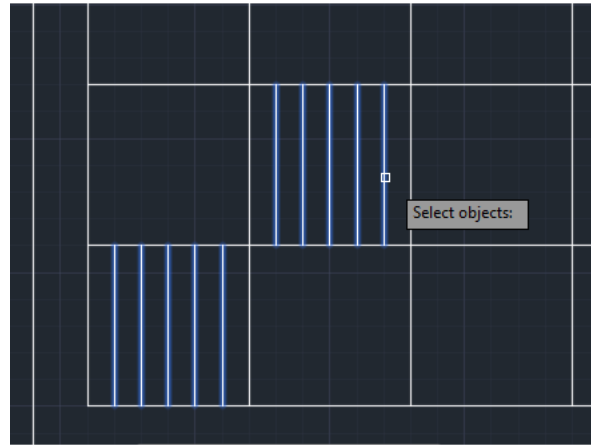
1. The temptation now would be to copy the remaining lines with the copy command to complete the dark squares. There is a faster method for copying multiple lines (Array command).
2. Select the Array command from the Home Ribbon Menu Tab.



3. The command box will display the following:



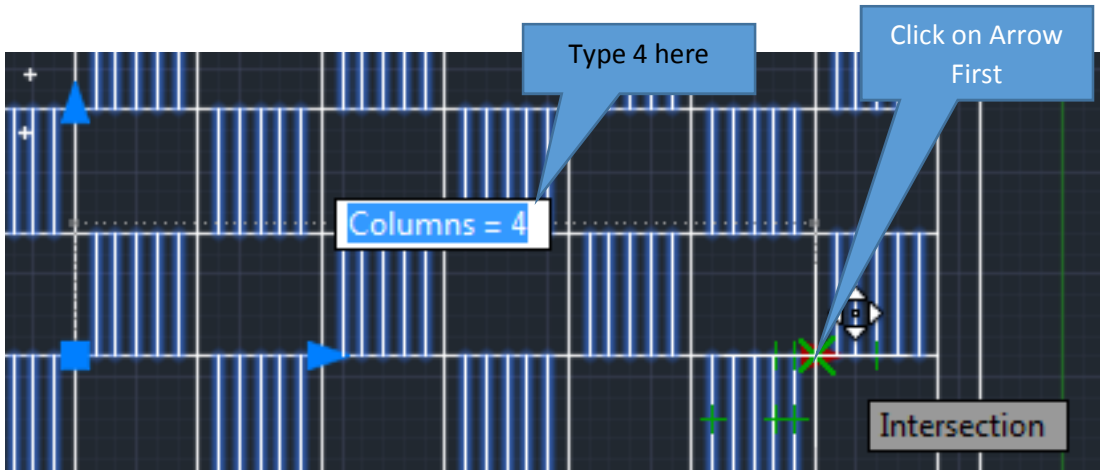
4. Select the lines that are inside of the two boxes as shown below and then press Enter.



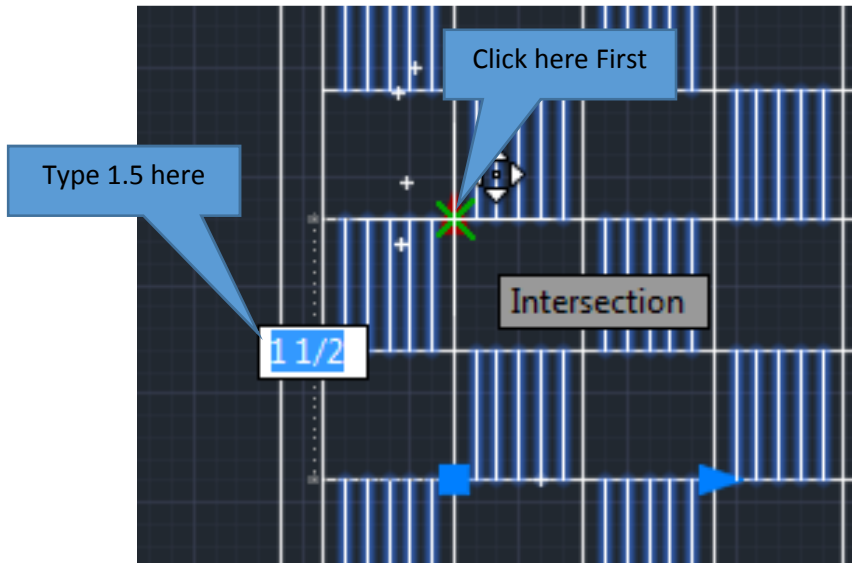
5. Click the Arrow Grip and type 1.5”.



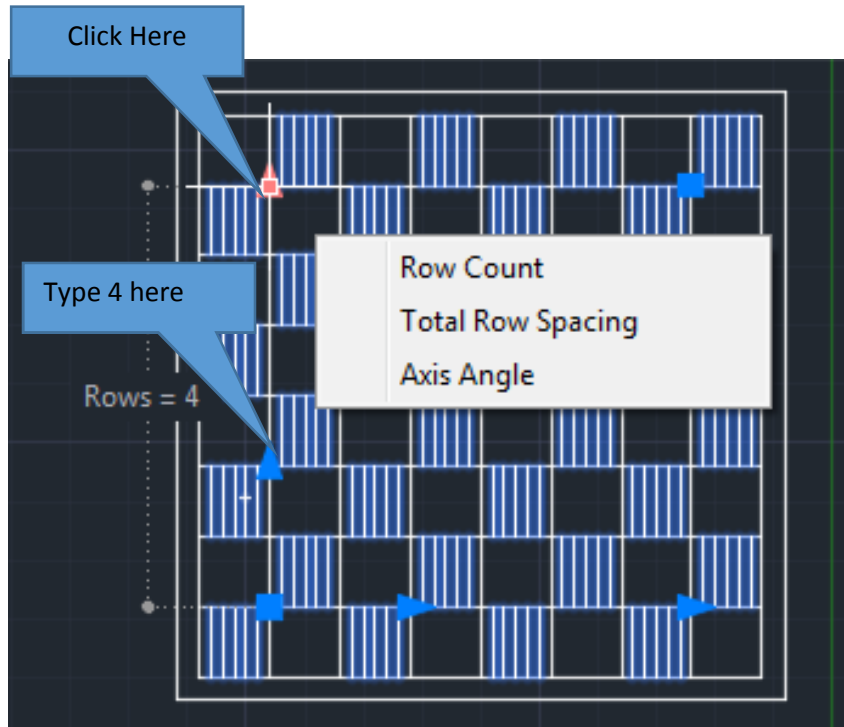
- The screen now say **COLUMN COUNT** and you should type 4 in the box and press Enter twice to complete and exit the command.



- Click on Arrow and type 1.5 for the distance.



- Click on the second arrow to change the Column Count to 4 and click Enter.



- Complete the **dimensions** of the drawing. Remember to **change layers** and place all **text** and **dimensions** in the **dimension layer**.

Terms to Know

Explode

Rectangular Array

Polar Array