Assignment 10

CAD Mechanical – Part 2

Fillet Command

Objectives

In this assignment you will learn to apply the **fillet** command along with commands previously learned.

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. Complete the title block and by typing the information into the block. The drawing will be drawn **full scale**. (1=1)
3. Insert the drawing title and drawing number illustrated below:

        Gasket   C15

4. Save the drawing in your Mechanical CAD folder in your U: drive. (C15LastFirstPd)

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

Drawing the Gasket, C15

1. After the **title block** is completed, make the **object layer current**. Draw the large **circle** with the **circle** with the **center radius command** (2 ½" radius). Then draw the **inner circle** using the circle command **center diameter 3 ½" diameter**).

2. **Change** to the **dimension layer** and locate the **center point** of the circle using the **center mark command**.

3. Use the **copy command** and **copy** the **center point 3"** to the **right side** of the **original center**. Be sure that **ortho** is **on** when moving the **copy 3" over to** the **right**.

Original center point

Copy original 3"to the right.
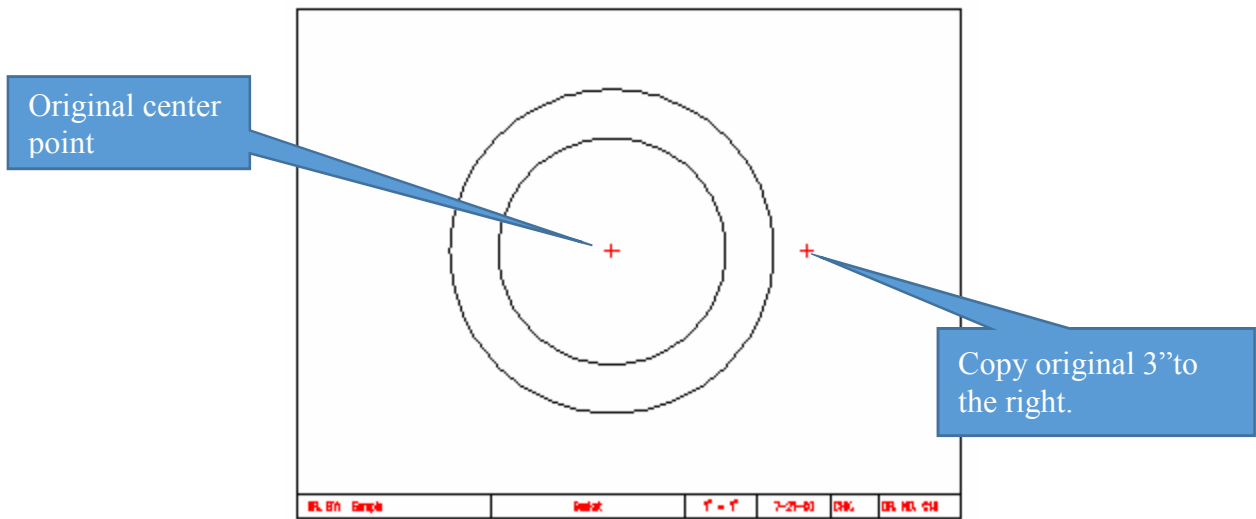
4. **Change** back to the **object layer** and **draw** the **two circles** using the **copied center point** mark. Draw the **larger circle using** the **circle command center radius (1 ¼" radius)**. Draw the **inner circle** using the **circle** command **center diameter (1" diameter)**.
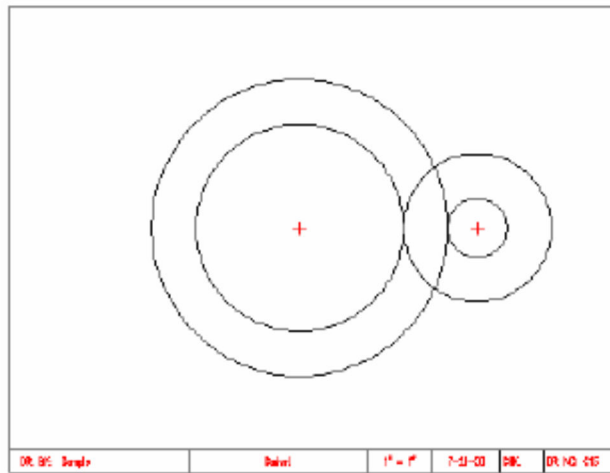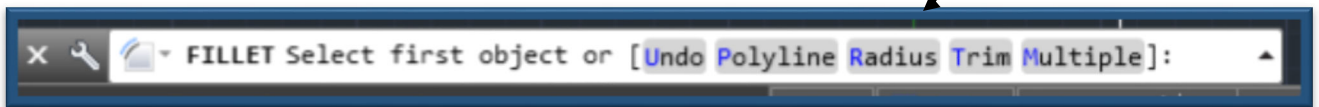
Note: Refer to C13-C24 goldenrod.pdf for dimensions.
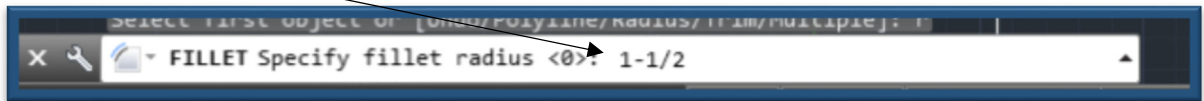
Command: Fillet Radius

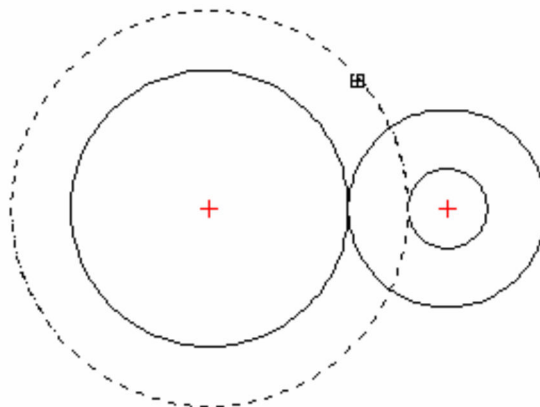1. **Select the Fillet command from the Home Tab Ribbon Bar.**
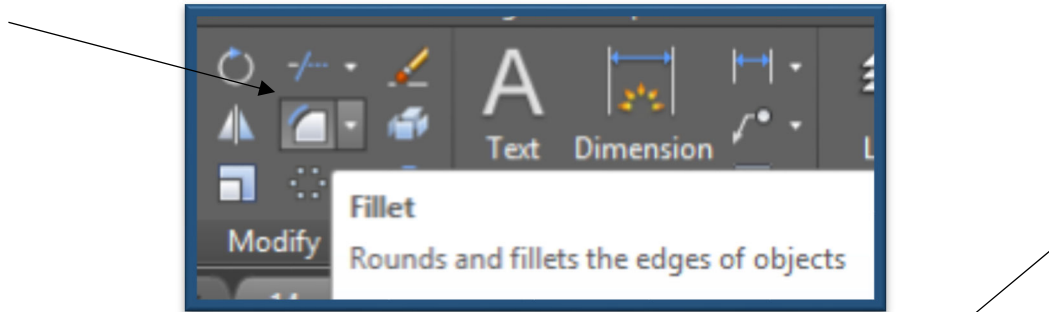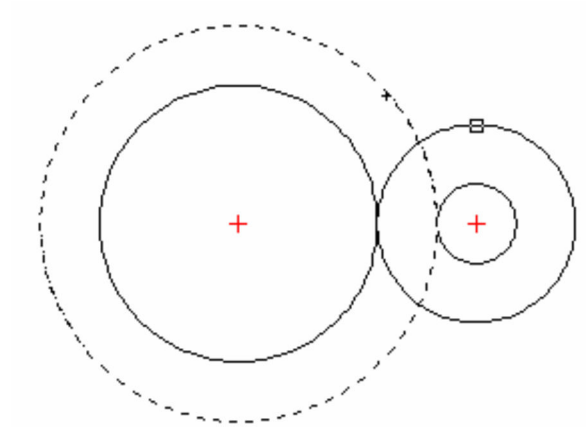

2. AutoCAD will give the option for Radius. **Type** r.

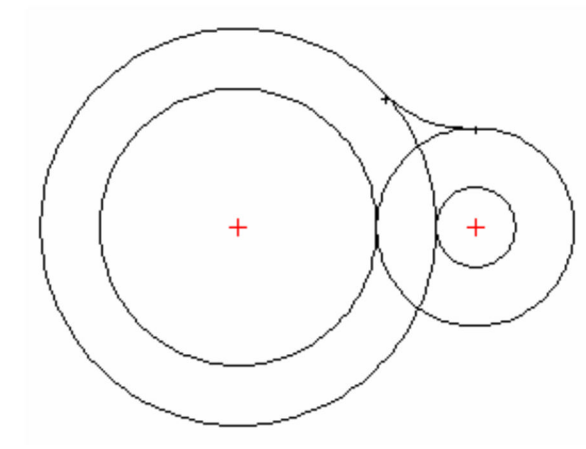3. **Press** the **Enter key**. The command prompts you to **input** the **distance** for the **radius**. **Type 1-1/2.**

4. Press the **Enter key**. **Move** the **pick box** to the **2 ½ " radius circle** and **pick it.**
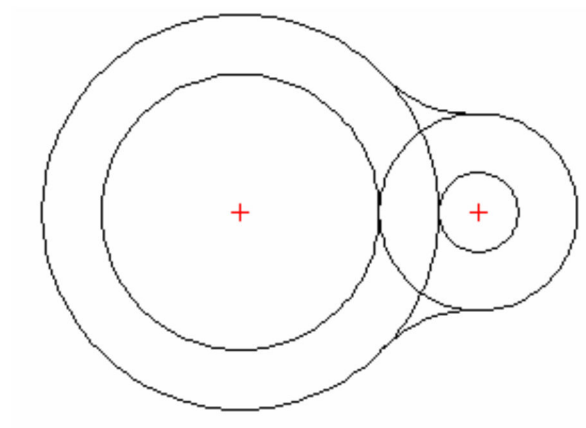
5. Position the **pick box** onto the **larger circle** to the **right** (**1 ¼" radius circle**).

6. **Pick** the **circle** and the **drawing** will **appear** as **illustrated**:
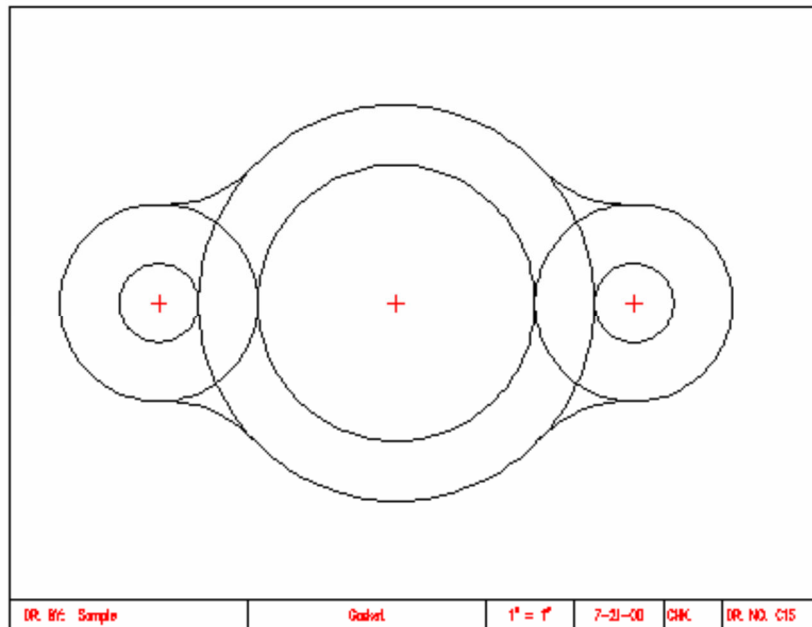

**7.** **Repeat** the **fillet command** on the **bottom half** of the drawing.

Command: Mirror and Trim

1. Use the **mirror command** to **copy** the **center point**, the **fillet radius**, and the **two circles** to the **left** of the drawing. Be careful to **select only** the **desired objects to mirror**. The mirrored image should appear as below:
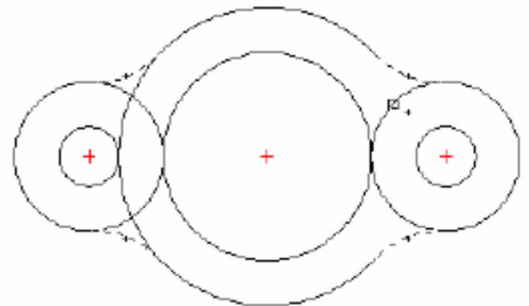

2. **Select** the Trim command and **select** the **four fillet radius lines** as the **cutting edges**.
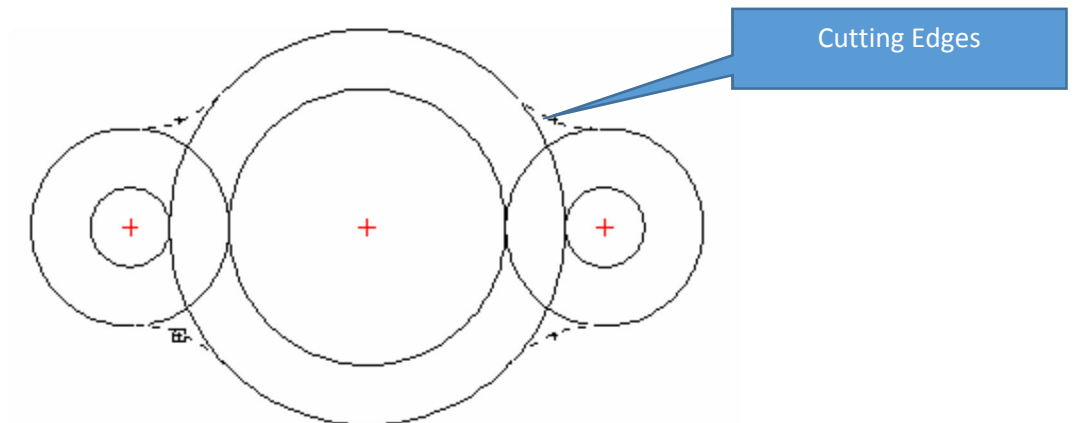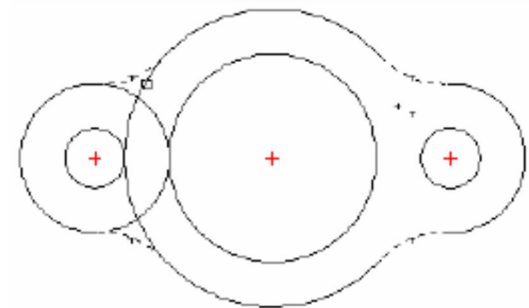
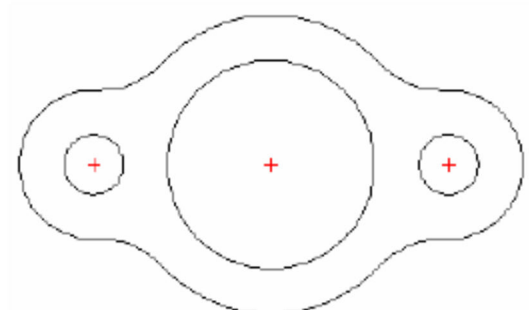3. Press the **Enter key** and then **select** the **largest circle** at **this location** with the pick box.
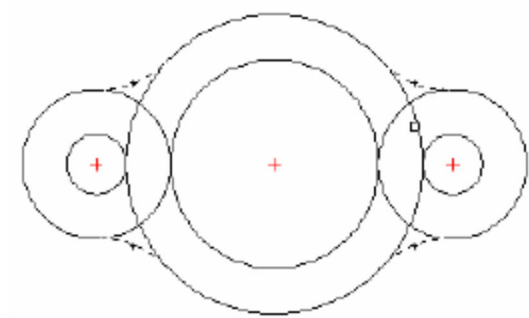
4. The **larger circle** is **now trimmed**. **Position** the **pick** box **onto** the **next circle** as illustrated:

5. **Pick** the **circle** and **position** the **pick box** to the other **circles on** the **left** of **the drawing**.
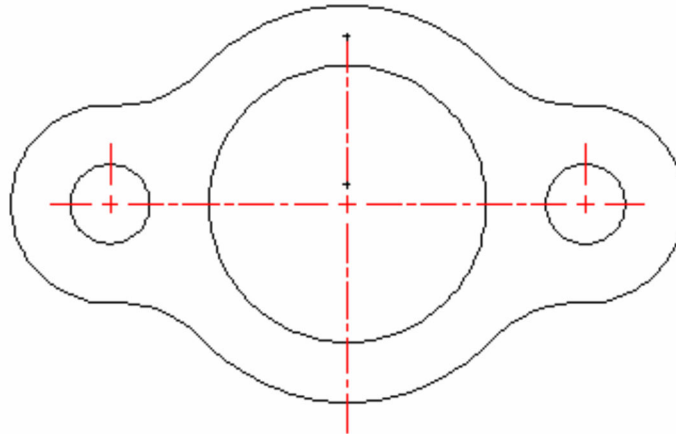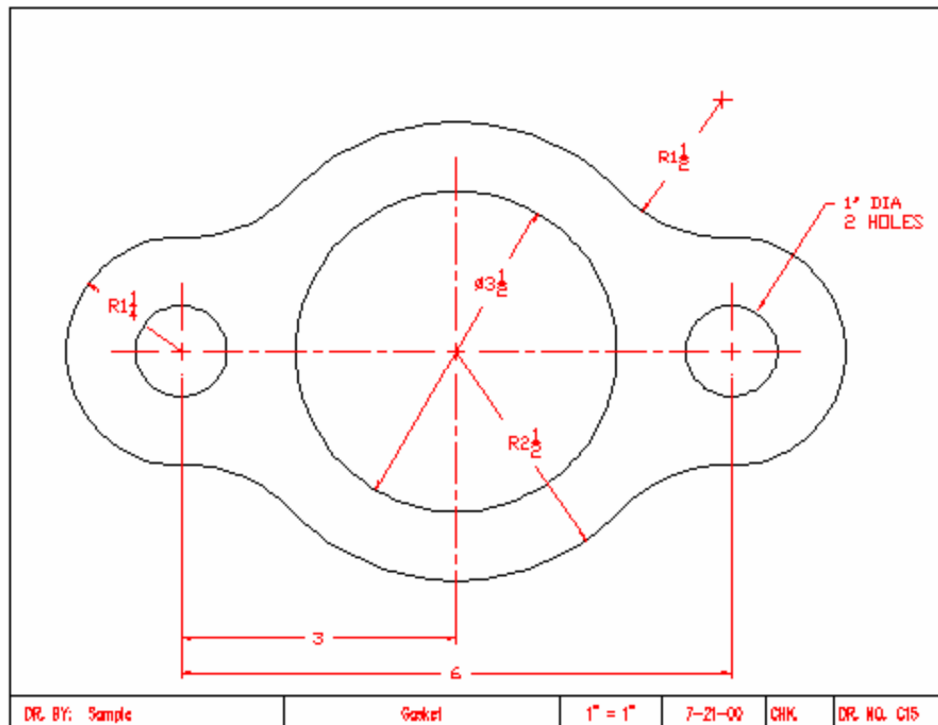

6. **Complete** the **trim command as illustrated** below:

Completing the Drawing

1. **Draw** the **center lines between** the **center point marks** and the **other locations outside** of the **center points as illustrated**. Remember to place the **lines** in the **center line layer**.

2. **Change** to the **dimension layer**. Complete **all** of the **dimensions** using **previously learned commands**.

General Instructions:

1. When AutoCAD's menu appears, scroll down and select the **Otto 2016.dwt** template file as you have on the previous assignments.

2. Complete the title block and by typing the information into the block. The drawing will be drawn **full scale**. (1=1)
3. Insert the drawing title and drawing number illustrated below:

   Bearing Fit Guide   C16

4. Save the drawing in your Mechanical CAD folder in your U: drive. (C16LastFirstPd)

Getting Started

1. Drawing **C16** is a continuation practice using the **fillet command** and the previously **learned commands**. If you forget how to perform a particular command, you should refer back to earlier assignments.

2. **Begin** the **Bearing Fit Guide** by constructing the **rectangle illustrated below**: Refer to the dimensions from the golden rod sample drawings:
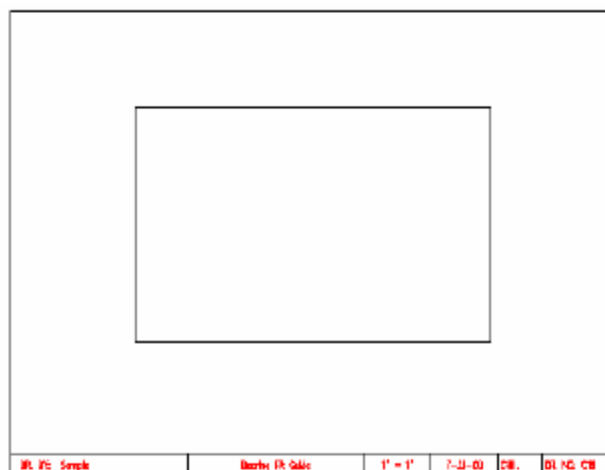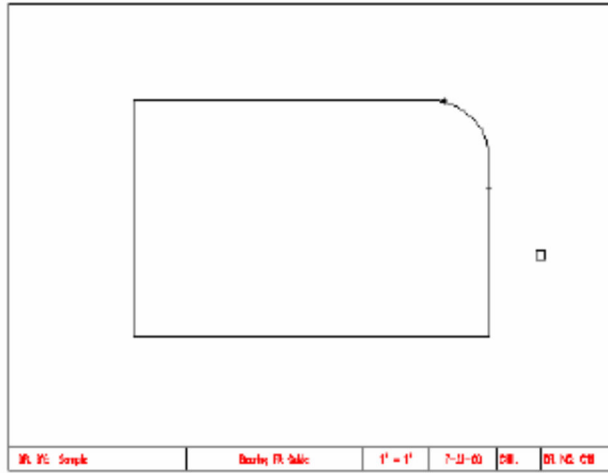
3. Select the **Fillet command from** the Home Tab Ribbon Bar and set the **radius** for the **fillet** to **1"**. **Position** the **pick** box **over** the on the **top horizontal line**.
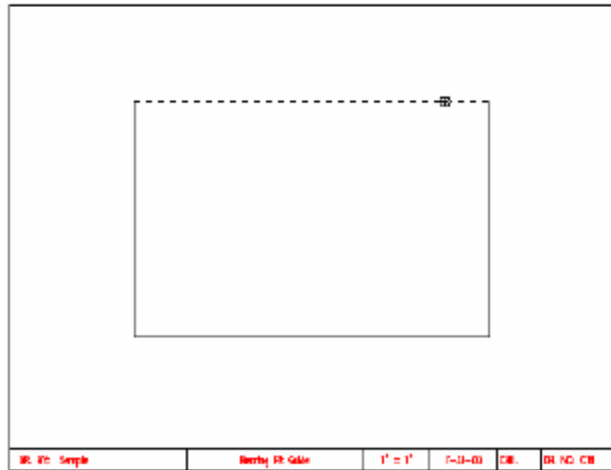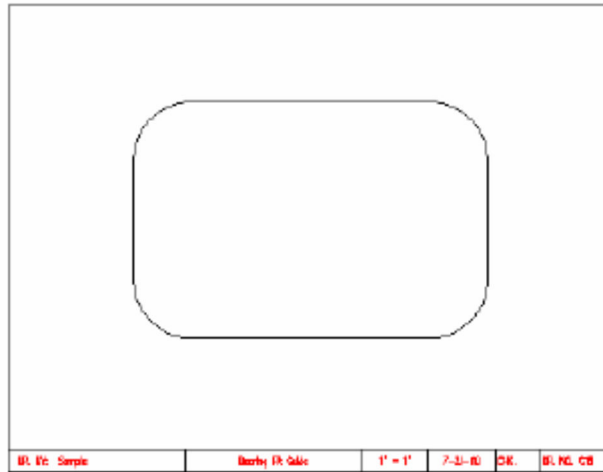
4. Position the **pick box** onto the **vertical line** to the **right**.
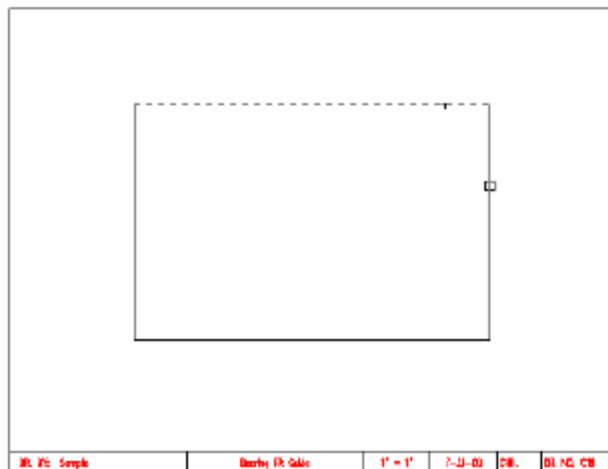
5. When you **pick** the **vertical** line, a **1" radius** should be **displayed**:
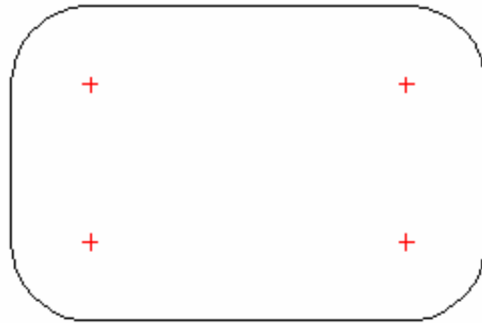

6. **Continue** the **Fillet** command until all **four corners** have a **radius of 1".**
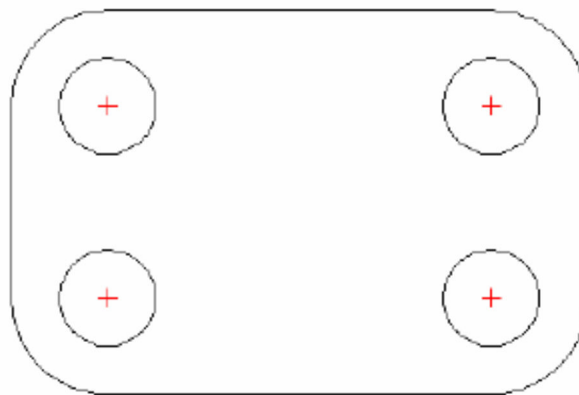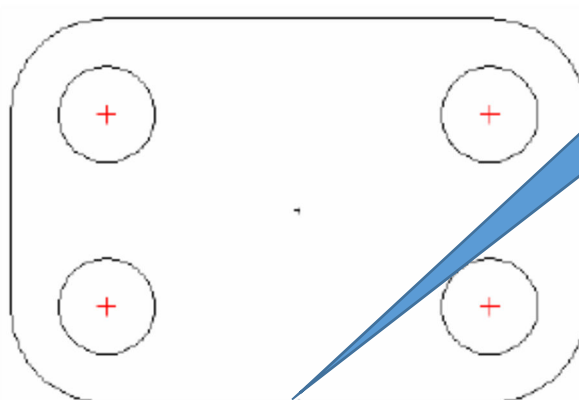
Locating Center Points & Center Lines

1. Change to the **center line layer** and locate the **center point** marks for the **rounded corners** of the drawing.

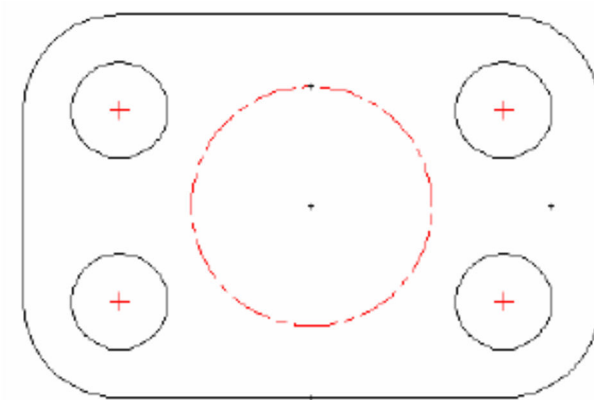2. Change to the **object layer** and **draw** the **four holes 1" diameter**.

3. Change back to the **center line** layer. **Use** the **distance tool with** the **midpoint snap** to **locate** the **center** of the drawing **as illustrated** then **move** the **cross hair** up **2"** for the **second blip** that **marks** the **middle** of the **drawing vertically**.
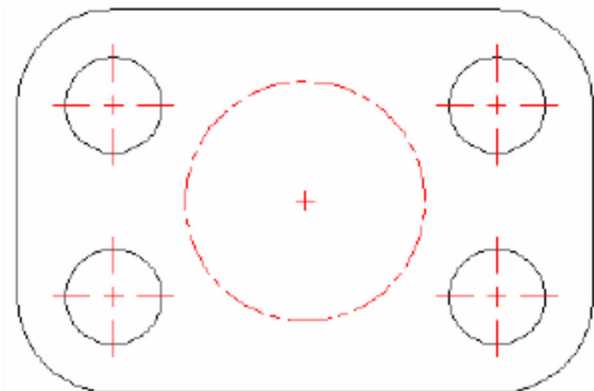

Midpoint blip created using midpoint tool with distance command.

4. **Draw** the **center line** circle using the **second blip as** the **center** of the **circle**.

5. **Continue drawing** the **center lines** on the drawing. They will help you **locate** the **center points** for the **½" diameter evenly spaced** holes around the **center circle**.
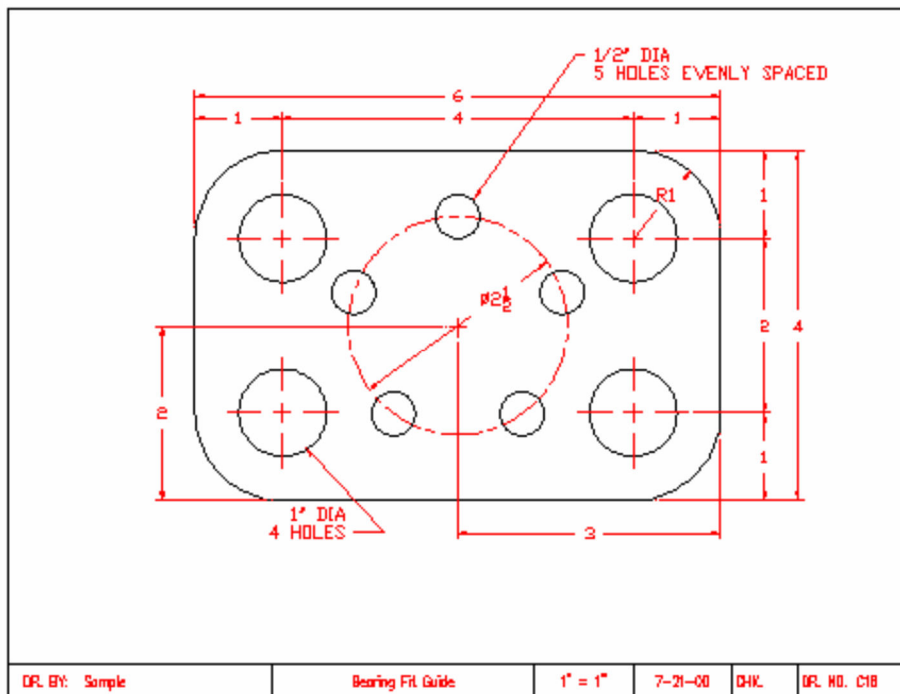

6. **Change back** to the **object layer** and **draw** the **top ½" diameter circle**.
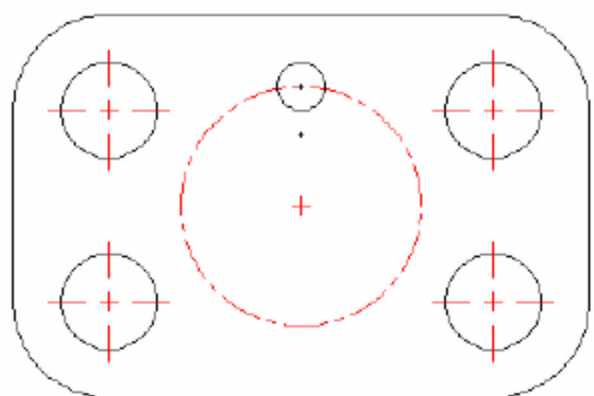
7. **Complete** the **array command** of the other **½" diameter** circles around the **center line circle**.
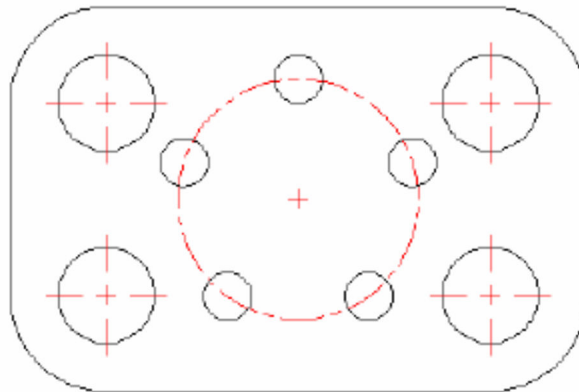
8. **Complete all** of the **linear dimensions**, **leader dimensions**, and the **diameter** and **radius dimensions** as illustrated below:

9. **Save** the **drawing** into the **correct location** and **file name format**. **Check** the **vocabulary words**. **Be sure** that you **completed assignments C15** and **C16** in the activity **before advancing** to **Activity 11**.

Terms to Know

Fillet radius - The fillet radius is the radius of the arc that connects filleted objects. Changing the fillet radius affects subsequent fillets. If you set the fillet radius to 0, filleted objects are trimmed or extended until they intersect, but no arc is created.