

DUE DATE \_\_\_\_\_

NAME \_\_\_\_\_

**ENGR/DRAFT 105 Assignment #16**  
**AutoCAD: Geometric Construction and Editing Tools – Chapter 3**

Copy your drawing A1.dwg to the other filenames for this assignment. Note that you will not be including dimensions at this time.

Note: At this time it is a good idea to save your workspace preferences (i.e., how the toolbars are arranged, how the display cursor looks, etc.) on your workstation, into a “Profile”. That way, if you start AutoCAD and things are not arranged how you like, you can simply open your “Profile”, and the workspace will be restored. To save your Profile, use the “Tools” pull-down menu, select “Options”, then select the “Profiles” tab, then select “Add to List”, then choose your Profile Name (you can just use your name, so you will easily recognize your profile). Then you can highlight your Profile Name, and then select “Set Current” (that is how you would change the profile to your profile).

- Do the Lesson 3 Tutorial and print out a hard copy (for me, if the semester was Fall 2004, the FILENAME.dwg would be NA\_L3\_F04.dwg)
- Hard copy of drawing 3\_1 (my file would be named NA\_E3\_1\_F04.dwg)
- Hard copy of drawing 3\_3 (my file would be named NA\_E3\_3\_F04.dwg)
- Hard copy of drawing 3\_4 (my file would be named NA\_E3\_4\_F04.dwg)

Note that drawing 3\_3 is in Millimeters (1” = 2.54 cm = 25.4 mm), so choose the following options to make a new template, called A1\_METRIC.dwg (the paper width and height are in mm and correspond to an 11” by 8.5” paper):

- Type MVSETUP  
Enable paper space: NO  
Enter units type: METRIC  
Enter the scale factor: 1  
Enter the paper width: 279.4  
Enter the paper height: 215.9
- Offset the paper outline inward 12.7 (mm) to create a border.
- Proceed to create the Title Block (you will need to refer to the dimensions for the A1.dwg template, and convert inches to mm).

**Be sure to include the following (in the title block section) on each AutoCAD drawing:**

DRAWING TITLE (e.g., WIDGET 3\_3)  
NAME (YOUR NAME)  
FILENAME.dwg (e.g., NA\_E3\_3\_F04.dwg)  
Date (e.g., 10/23/04)  
Scale (e.g., 1:1)

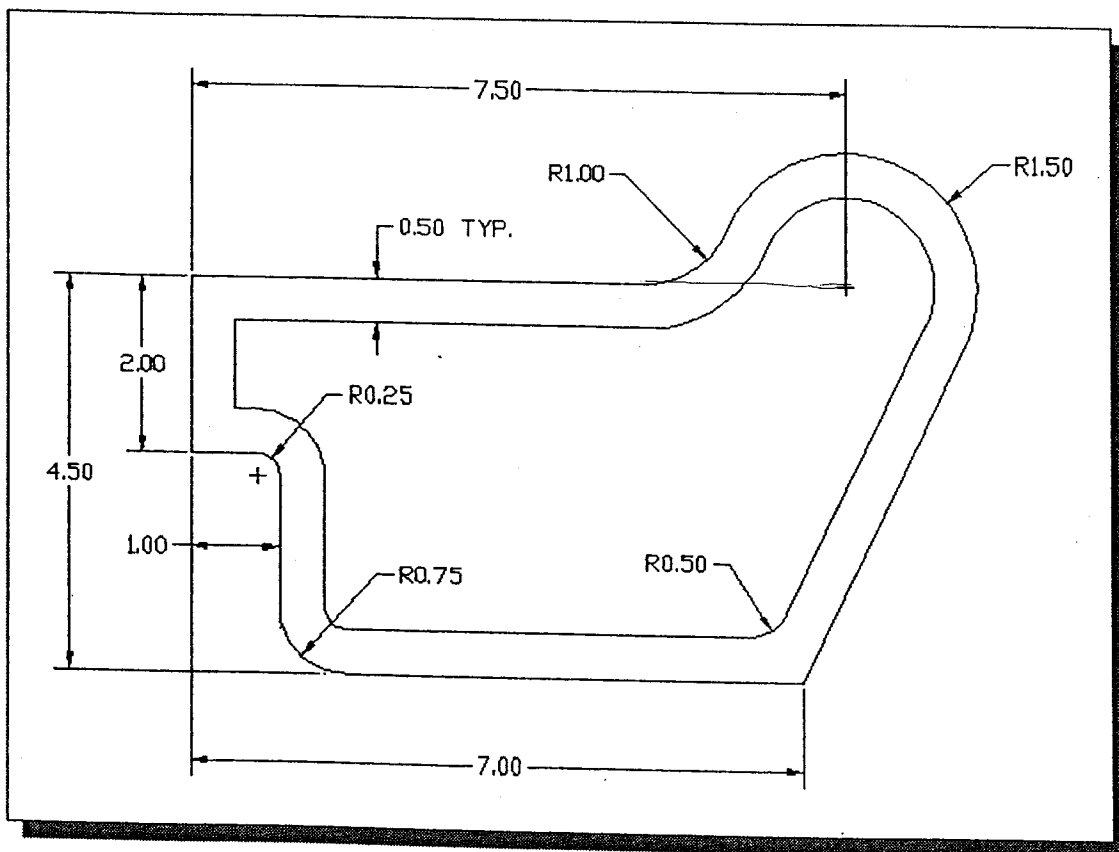
**Staple this sheet to the front of your drawings in the correct order. Write your name at the top of the page.**

## Introduction

The main characteristic of any CAD system is its ability to create and modify geometric entities quickly and accurately. Most CAD systems provide a variety of construction and editing tools to relieve the designer of the tedious drudgery of this task, so that the designer can concentrate more on design content. It is important to note that CAD systems can be used to replace the traditional drafting with pencil and paper, but the CAD user must have a good understanding of the basic geometric construction techniques to fully utilize the capability of the CAD systems.

In this lesson, we will examine the basic geometric construction and editing tools provided by AutoCAD® 2002. We will first look at tools such as *UNITS*, *GRID*, *SNAP* intervals setup and the *OSNAP* option, followed by editing tools such as *Trim*, *Extend*, *Fillet*, *Pedit* and *Offset*. We will illustrate the basic geometric construction and editing options available in AutoCAD® 2002 by constructing the *Gasket* design, as shown in the below figure.

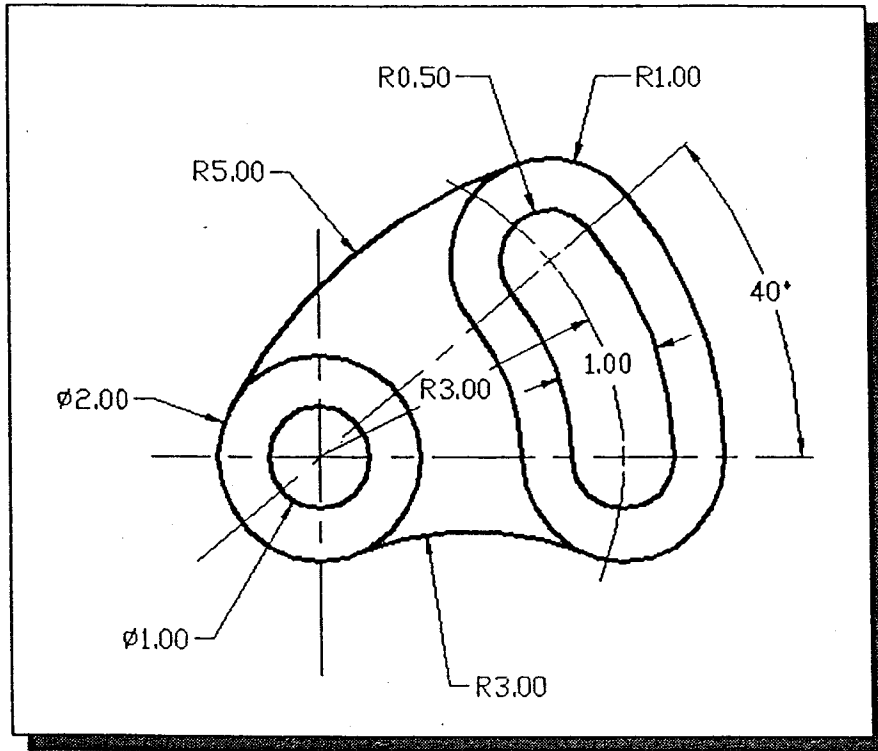
### The Gasket Project:



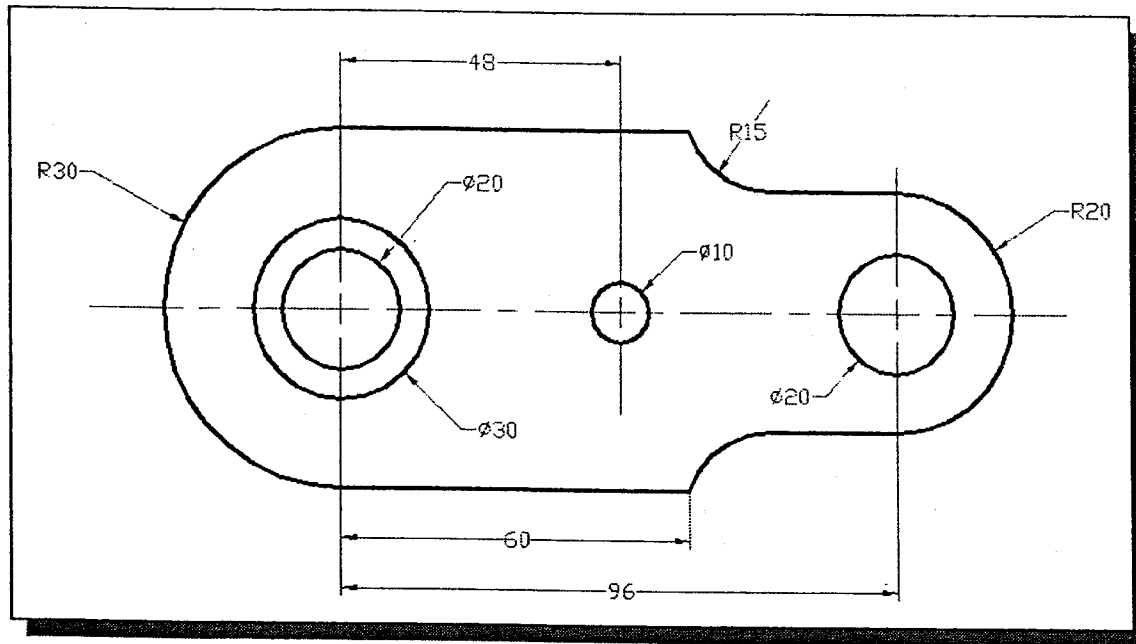
- ❖ Before continuing to the next page, on your own make a rough sketch showing the steps that can be used to create the design. Be aware that there are many different approaches to accomplishing the same task.

**Exercises:** Unless otherwise specified, dimensions are in inches.

1.



3-3. Dimensions are in Millimeters.



4.

