MET 107
Homework 3 – MS Word Drawing

Why:
Quite often, an engineering project culminates with a written report which usually includes figures. As an engineer, your performance will be enhanced by learning different methods used to create figures for reports. Using MS Word drawing tools is one of the ways used. This activity supports course objective #1.

Learning Objectives:
1. To use MS Word drawing objects to create technical sketches for inclusion in reports.
2. Be able to use the snap and grid functions.
3. Copy and group drawing objects.
4. To align, distribute, rotate and flip objects and groups of objects.
5. Use ordering and word wrapping.

Performance Criteria:
1. Prepare neat and professional looking sketch.
2. Proper sketch proportion.
3. Be able to use duplicating features to work faster.

Getting Ready:
- Familiarize yourself with the Shapes available in the illustrations group under the Insert tab.
- Pick the View Tab turn on the Gridlines in the Show/Hide group
- Create a singular line from the shapes box. With this line active, set the Grid settings under the Align options in the Arrange group listed under the Format Tab to the values in the dialog box as shown to the right. Your snap will be .06 inches and the gridline will be displayed every four units. You will see a .24 x .24 grid on your sheet.
PLAN:

1. Add a header on the right side to include your name, MET 107.n, HWK 3 and the date. Use text to identify each of the following problems.

2. Draw the figure shown below using the LINE tool. The number indicates the length of the side in grid blocks. Draw the figure a second time using the FREEFORM tool which is found in the Lines menu. The line width for the second one should be 1.5 pt. and the Freeform should be filled with a yellow color.

3. Draw two concentric circles. The outer one is one-inch (4 blocks) diameter and the inner one is .75 inches (3 blocks). Use the alignment tools to center them with respect to one another.

4. Draw a circle having a diameter of .96-inch (1-inch nominal). Copy it and paste it four times to obtain five total circles. Align the circles horizontally, evenly spaced. There should be .96-inch (1-inch nominal) spacing between the circles as shown in red. Be sure to use the align and distribute tools to do this.

5. Draw a regular hexagon having a .64 height. Copy the hexagon and align the copy horizontally with the first hexagon. Rotate the second hexagon through 30 degrees as shown below. Be sure to use the Free Rotate button while holding down the SHIFT key.
6. Create the following figure:

![Figure 6]

- Circle Dia = .96"
- Rectangle 1.2" x .72"

Note that the center of the circle is exactly at the corner of the rectangle.

7. Copy the figure from number 6 and paste it below the original. Change the ORDER of the objects so that the rectangle is in front of the circle.

![Figure 7]

Remember that you don’t have to include the red text or objects in your document.

8. Copy the figure from number six and flip it. What do you have to do to get an exact mirror copy?

Type in your answer!

9. The ORDER tool is essential when creating the following figure. Use the FLOWCHART: **OR** symbol two times: one with no fill and one with black fill. You will also need two squares with white fill and no border line. Use 1” nominal diameter for the OR symbol. Stack and align the drawing objects to get the required symbol. Hint: Use of transparency is required; transparency and background fill color is modal.

![Flowchart - OR]

10. Create the following figure. Use a textbox for the dimension value. It will have no outline and no fill. The dimension textbox will be IN FRONT of the line.

![Settings for the arrows on the dimension line]

- 2.75
- .5 pt wide line
- 1.5 pt wide line