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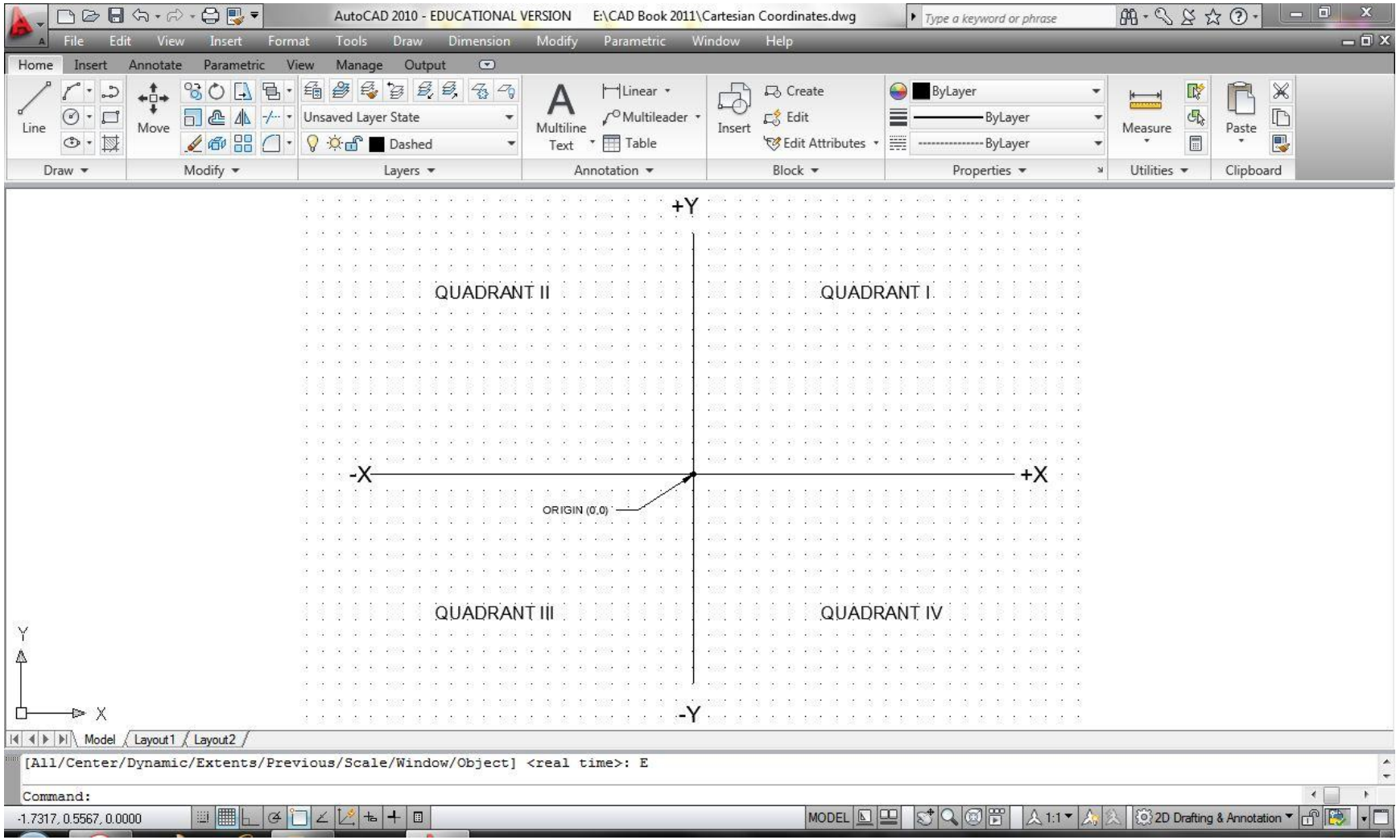
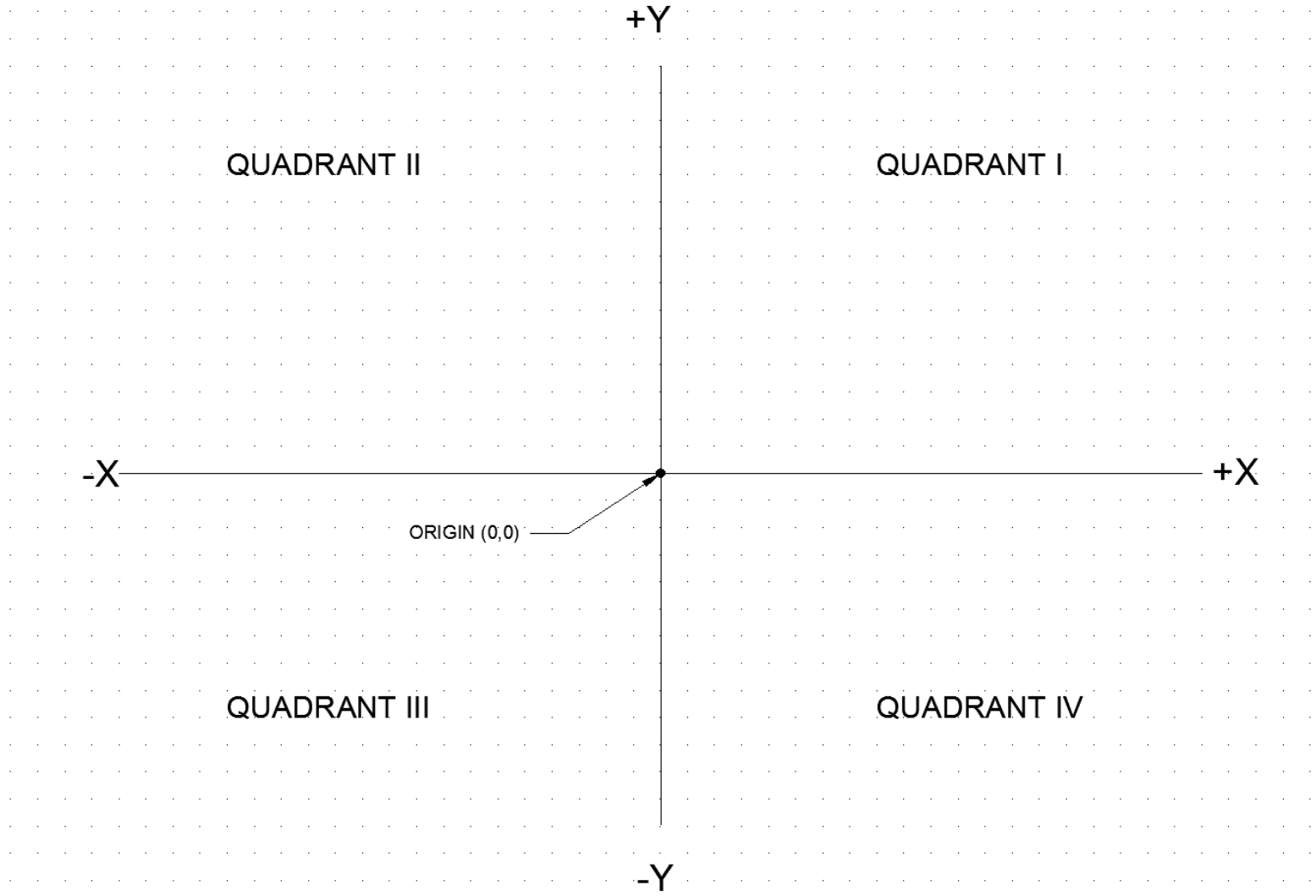
Tutorial Guide for AutoCAD or AutoCAD LT



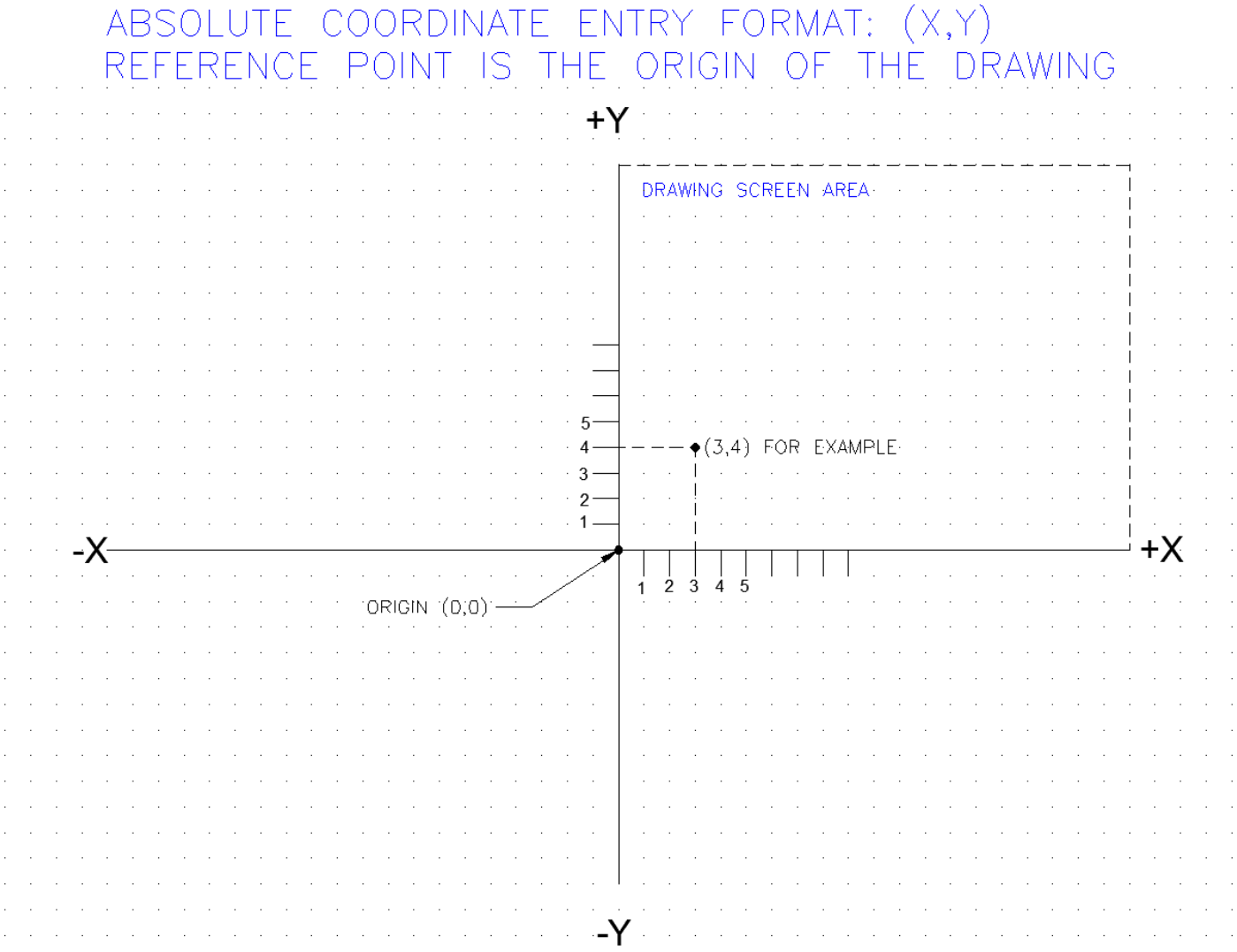
CARTESIAN COORDINATE SYSTEM

The Cartesian Coordinate System has three axes. It is made up of a horizontal "X", a vertical "Y", and an axis that is perpendicular (90 degrees) to the plane formed by the X and Y axes called "Z". Distances are selected, one from the X and one from the Y, to locate a point at the intersection of these two distances. *This is for 2D drawing only.*



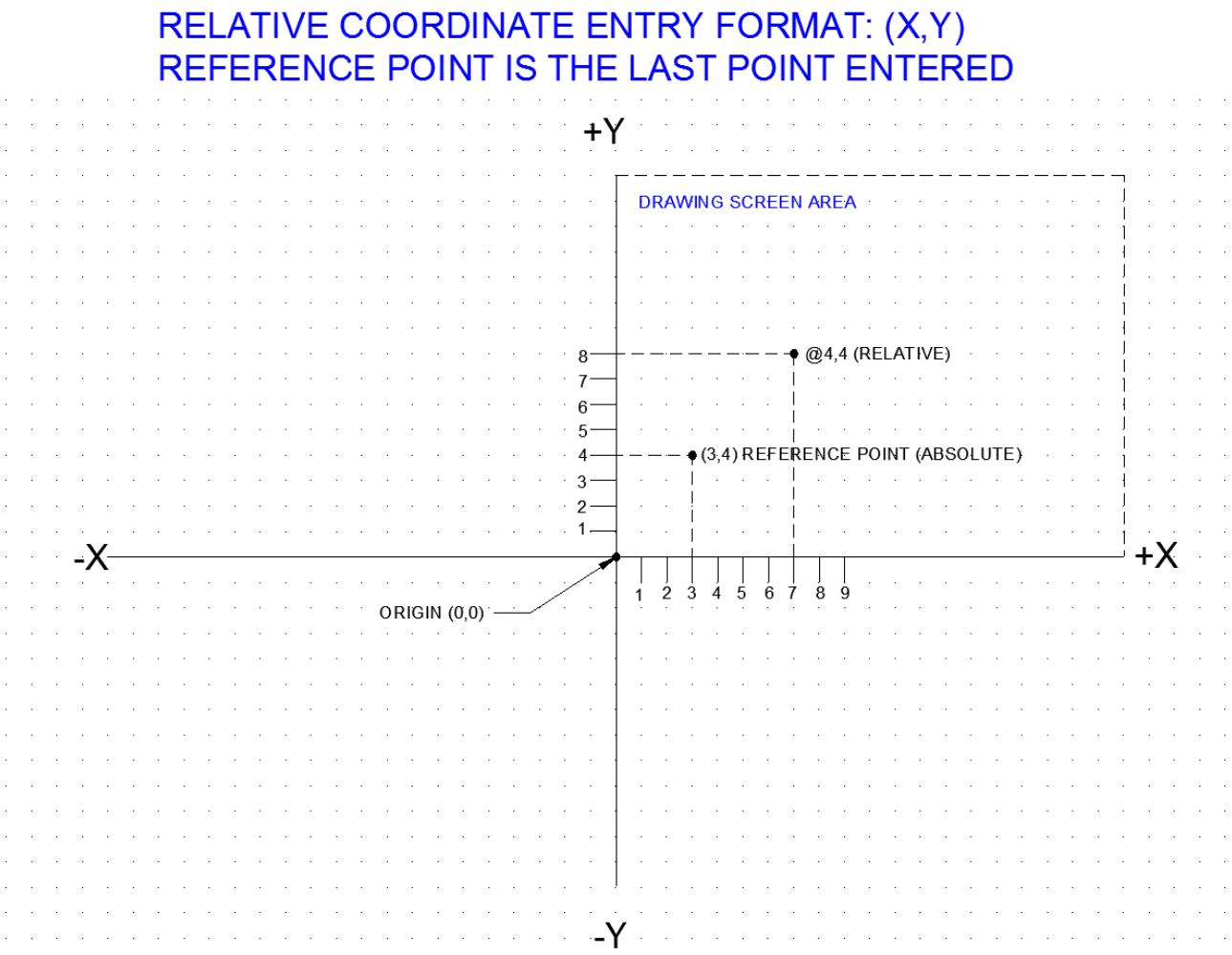
ABSOLUTE COORDINATES

When using an Absolute Coordinate entry, the values of X and Y are referenced from the origin of the drawing. The origin has an X and Y value of 0,0. The format for Absolute Coordinate entry is X,Y. As a rule, negative values for X and for Y are not used with Absolute Coordinate entry.



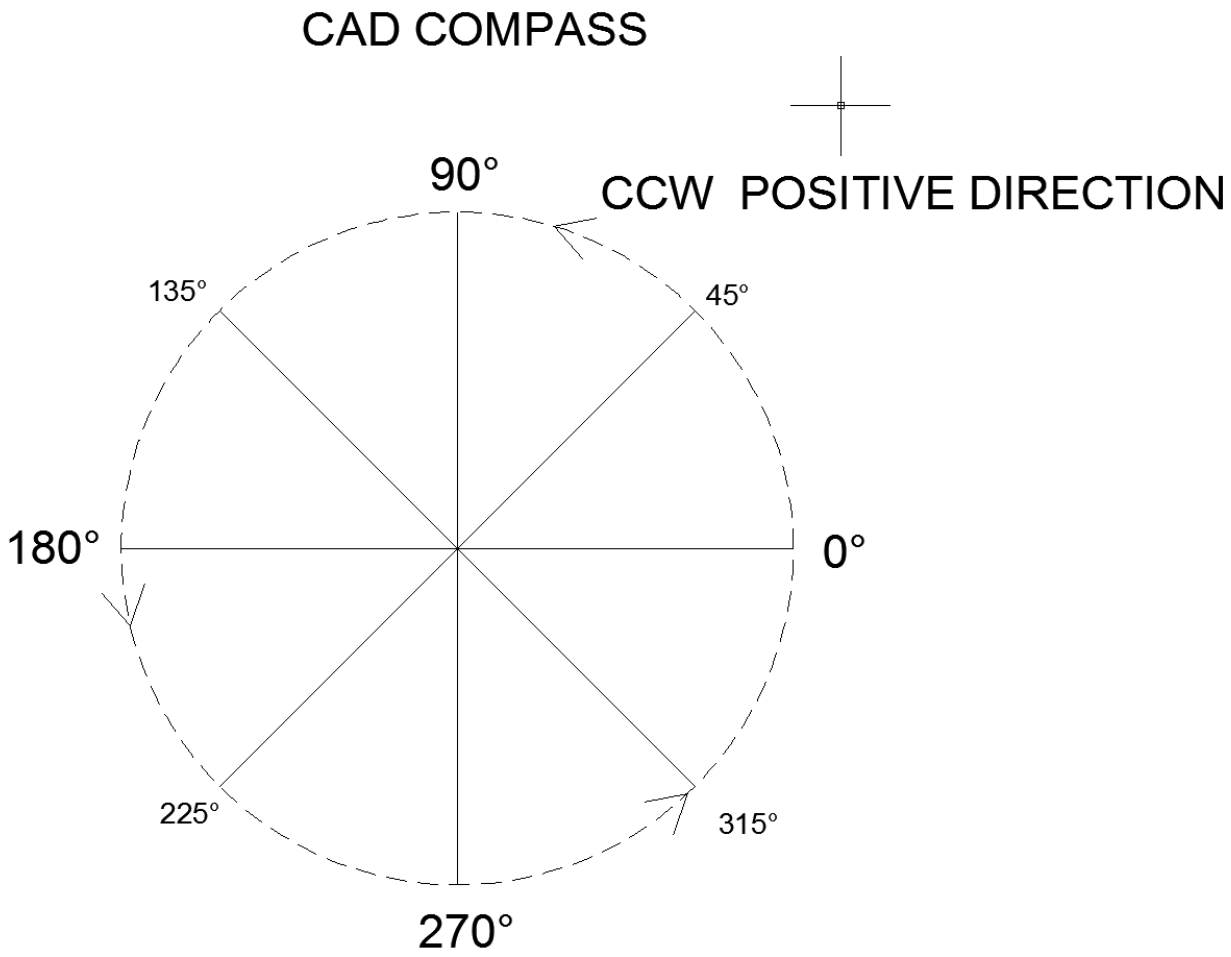
RELATIVE COORDINATES

When using a Relative Coordinate entry, the last values of X and Y are reference from the last point entered. The format for using Relative Coordinate entry is @X,Y. The @ symbol tells the computer that the method of entry is Relative. Negative values of X and Y are allowed using Relative Coordinate entry in order to move to the left in X and to move down in Y. The first point in a drawing must be entered using Absolute Coordinate entry because Relative Coordinate entry must have a previous point to reference.



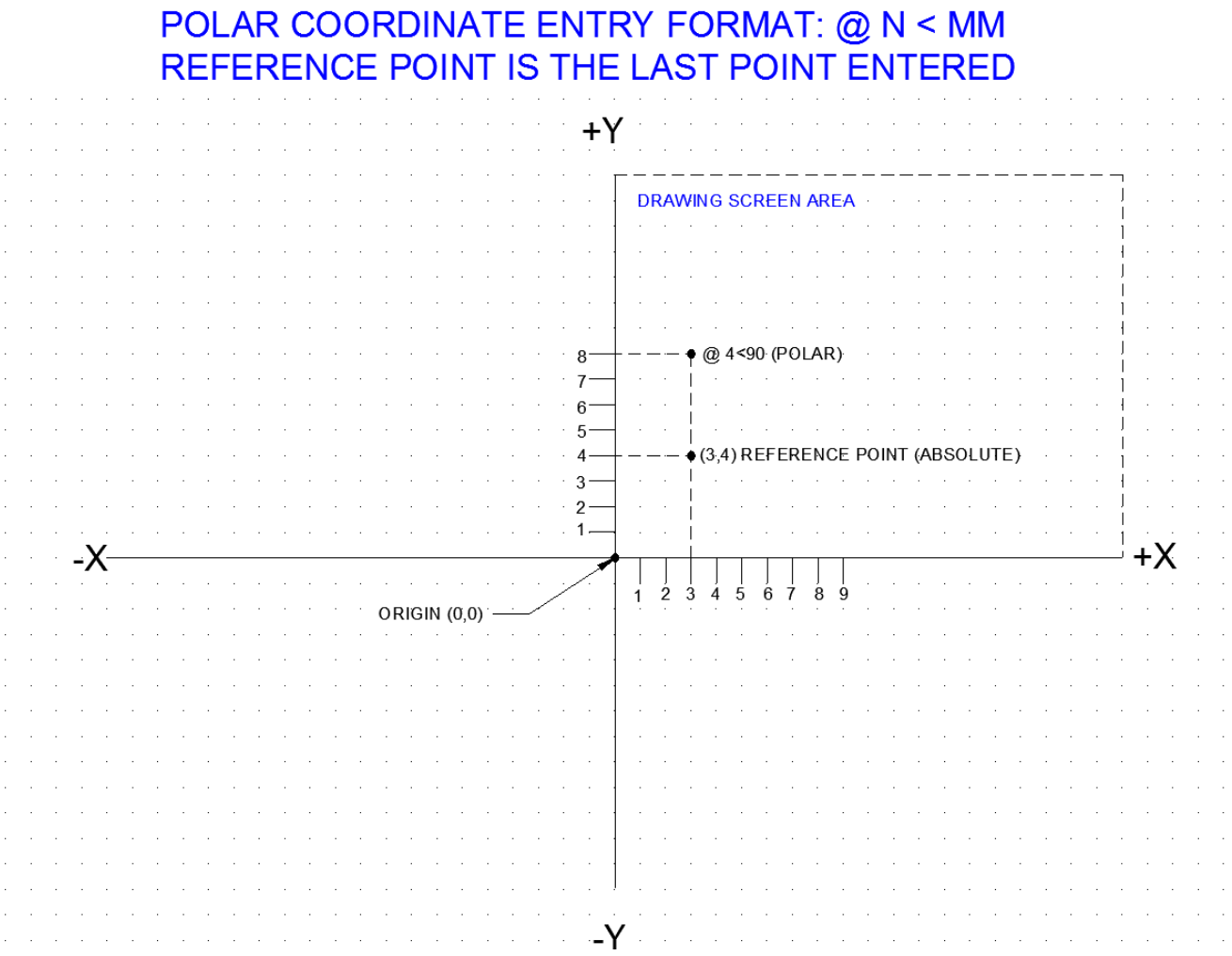
The CAD Compass

When specifying angular direction, counter clockwise (CCW) represents positive values for angles and clockwise (CW) represents negative values for angles.



POLAR COORDINATES

When using a Polar Coordinate entry, the distance to move and the direction (angle) are reference from the last point entered. The format for using Polar Coordinate entry is @N<MM. The @ symbol tells the computer that the method of entry is relative to the last point entered. The letter N represents the distance in the units you are working in. The < symbol indicates angle and the letters MM represent the angle in degrees.



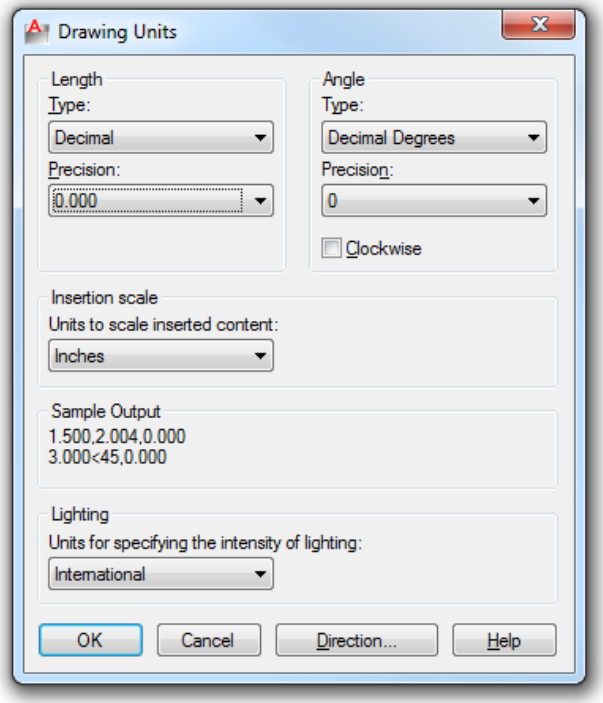
SETTING UP PARAMETERS

SETTING UP PARAMETERS

1. You will start each new drawing from the **FILE** menu. If prompted, select the template you want and click **OPEN**.

2. Go to **FILE** and select **SAVE AS** and enter the name for the drawing in the **FILE NAME** dialog box. Name the drawing (e.g. CHSBRUG1 or PVPHELAN1), use at least EIGHT CHARACTERS and NO SPACES. Use CHS or PV at the beginning of ALL your file names, followed by your last initials and a drawing number. Be sure to put your drawing in the correct **PERIOD FOLDER**.

3. Go to the **FORMAT** menu and select **UNITS**. This will bring up the DRAWING UNITS dialog box.



4. Set the **TYPE** to **DECIMAL** and set the number of digits to **0.000**.

5. For angles, select **DECIMAL DEGREES**.

6. Set angular **PRECISION** display to **0**.

7. Select the **DIRECTION** button at the bottom of the dialog box. Set the direction for angle **0** to be **EAST.** *This may already be the default value*.

8. Select the way that you want the angles to be measured, clockwise or counterclockwise. For this drawing, the setting should be **COUNTERCLOCKWISE**.

9. Make sure that the Insertion Scale is set to **INCHES**, and for now we will leave the Lighting set to **INTERNATIONAL**.

10. Select **OK** to close the DIRECTION and DRAWING UNITS dialog boxes.

11. From the FORMAT menu, select DRAWING LIMITS. The limits will be different for each drawing depending on the paper size.

A. For this drawing, set the lower left corner at **0,0** (default). **ENTER**

B. Set the upper right corner to **12,9** (default). **ENTER**

12. From the **VIEW** menu, **ZOOM ALL** to have the screen reflect the changes that were just made.

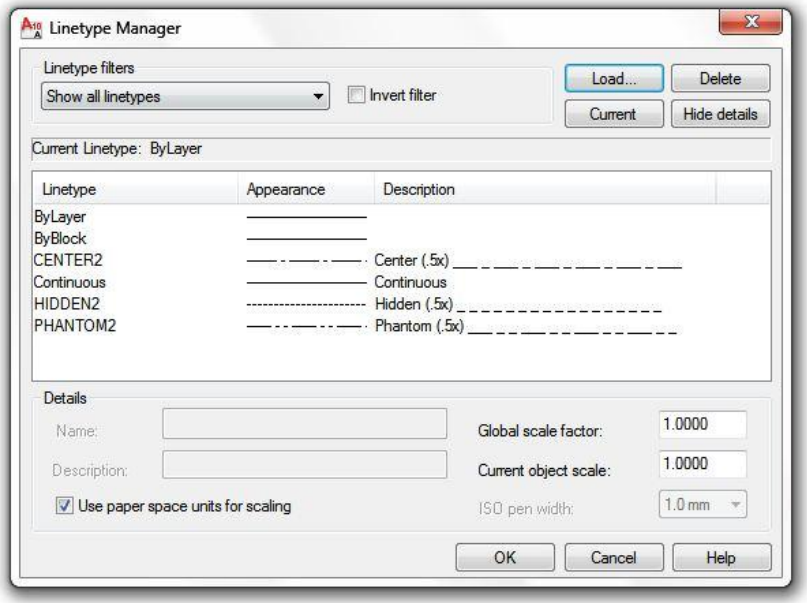
13. Right-click on the UCS icon in the lower left corner,  , and select **WORLD**.

14. Go to the **FORMAT** menu and select **LINETYPE**.

    A. Select LOAD

    B. Highlight CENTER2, HIDDEN2, and PHANTOM2 (hold the Ctrl [control] key to select them all at once) then select OK

    C. Select OK again if your lines were properly loaded.



15. Go to the **TOOLS** menu and select **OPTIONS**.

    A. Go to the Open and Save tab.

    B. UNCHECK the box for Automatic Save and Create Backup.

16. Go to the **TOOLS** menu and select **DRAFTING SETTINGS.**

    A. Set GRID and SNAP to appropriate increments

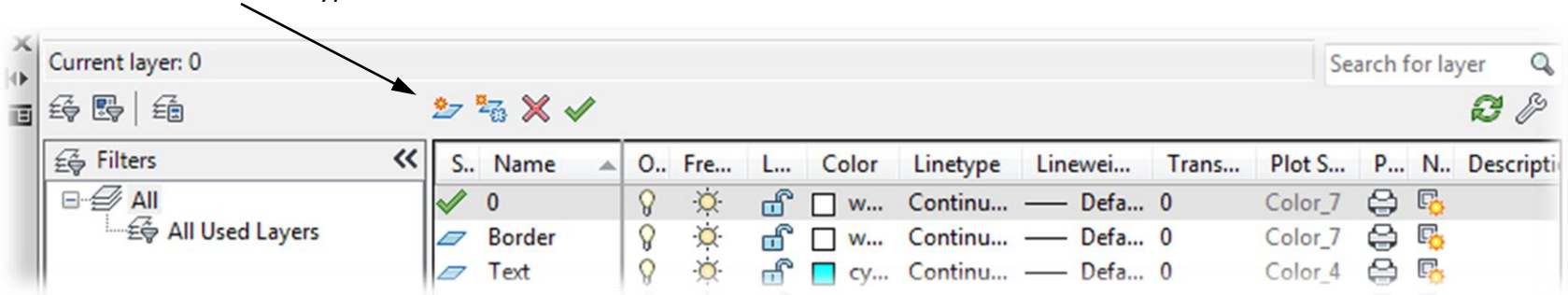
    B. In this case: X SPACING = .**25** and Y SPACING = .**25**.

    C. Set **MAJOR LINE** to **4** for desired grid pattern.

    D. DO NOT turn on SNAP, just pick OK (snap and grid can be turned on at the bottom of the CAD screen).

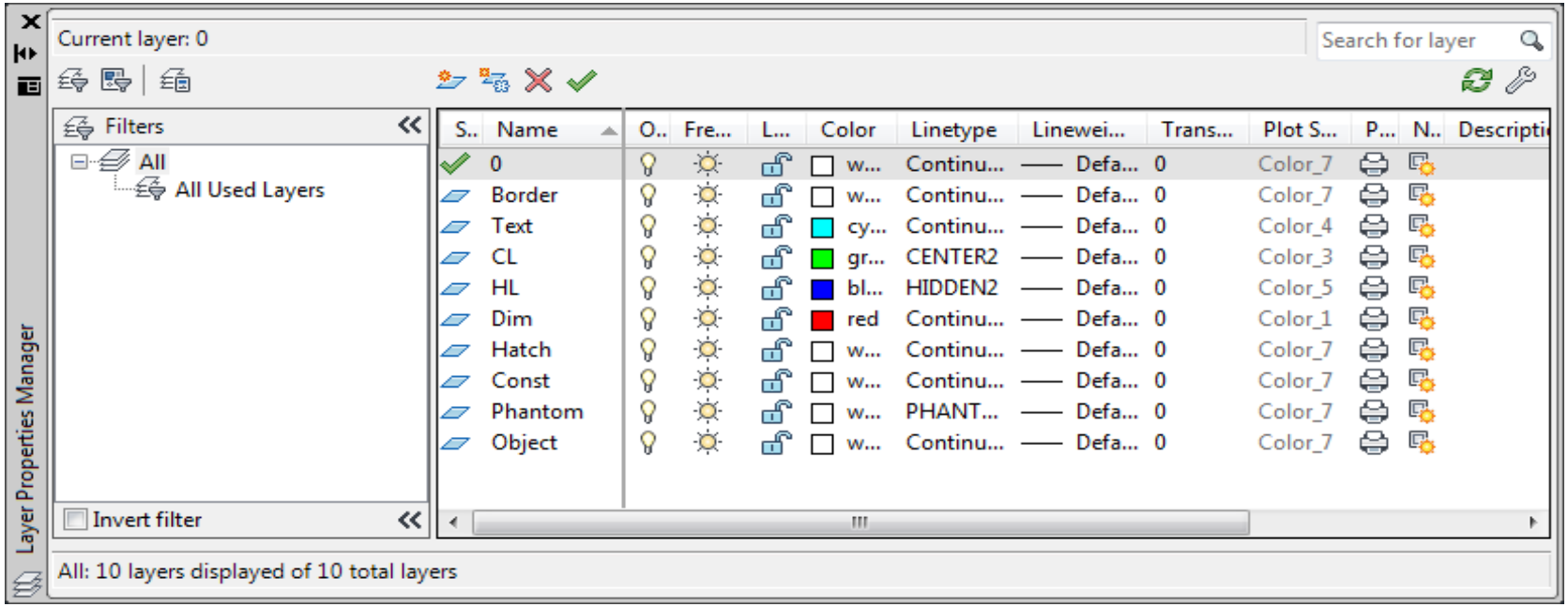
17. Under the **FORMAT** tab, click **Layer…**

18. Click **NEW LAYER** and type **BORDER** in the **NAME BOX.**



19. Continue this process until you have created a **NEW LAYER** for each item listed below. Select each layer individually and set the correct color by selecting the **COLOR** menu (the colored squares). Also set the correct linetype by selecting the **LINETYPE** menu. Set each layer according to the list below. ***NOTE: FOR THE FIRST 5 PRACTICE PROBLEMS, ONLY CREATE THE OBJECT AND TEXT LAYERS.***

LAYER NAME	**COLOR**	**LINETYPE**
1. 0	White	Continuous
2. Border	White	Continuous
3. Text	Cyan	Continuous
4. CL	Green	CENTER2
5. HL	Blue	Hidden2
6. Dim	Red	Continuous
7. Hatch	Any color	Continuous
8. Const	White	Continuous
9. Phantom	White	Phantom2
10. Object	White	Continuous

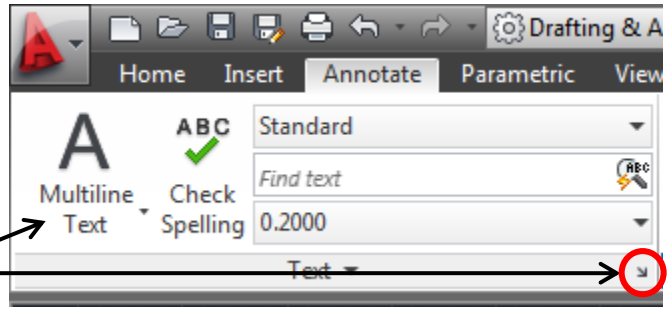


20. Highlight the **OBJECT** layer, then pick the **CURRENT** button (green checkmark). You will see a checkmark appear next to **OBJECT**.
21. Click the **X** in the corner to close the window
22. Type **Z**, ENTER, **A**, ENTER. This performs a Zoom All.
23. Select **SAVE** from the **FILE** menu to save all the parameters you have created. Make sure to save regularly.
24. Follow the instruction on the next page to proceed with the first five practice drawings, otherwise continue on with your drawing.

PROCEED WITH THE FIRST FIVE PRACTICE DRAWINGS AS FOLLOWS:

1. Now you are ready to begin the drawing. Select the current layer displayed in the **LAYERS** box on the HOME tab.
2. Pick the **OBJECT** layer.
3. Type **Z**, ENTER, **A**, ENTER. This performs a Zoom All.
4. Click on the **HOME** tab
5. From here, select **LINE** in the **DRAW** box
6. You will see at the bottom of the screen The prompt: **LINE SPECIFY FIRST POINT:**
7. Type from the keyboard your Absolute starting coordinate and the press **ENTER.**
8. You will see at the bottom of the screen The prompt: **SPECIFY NEXT POINT:**
9. Type the value for the second point from the list of coordinates you developed.
10. You will be continuously prompted for the **SPECIFY NEXT POINT** to which you will respond with the appropriate values from the list of coordinates you developed. Enter all values to complete the figure.
11. Select TEXT layer from the LAYERS pulldown menu.

12. Select the ANNOTATE tab and select the TEXT expansion arrow in the TEXT box .

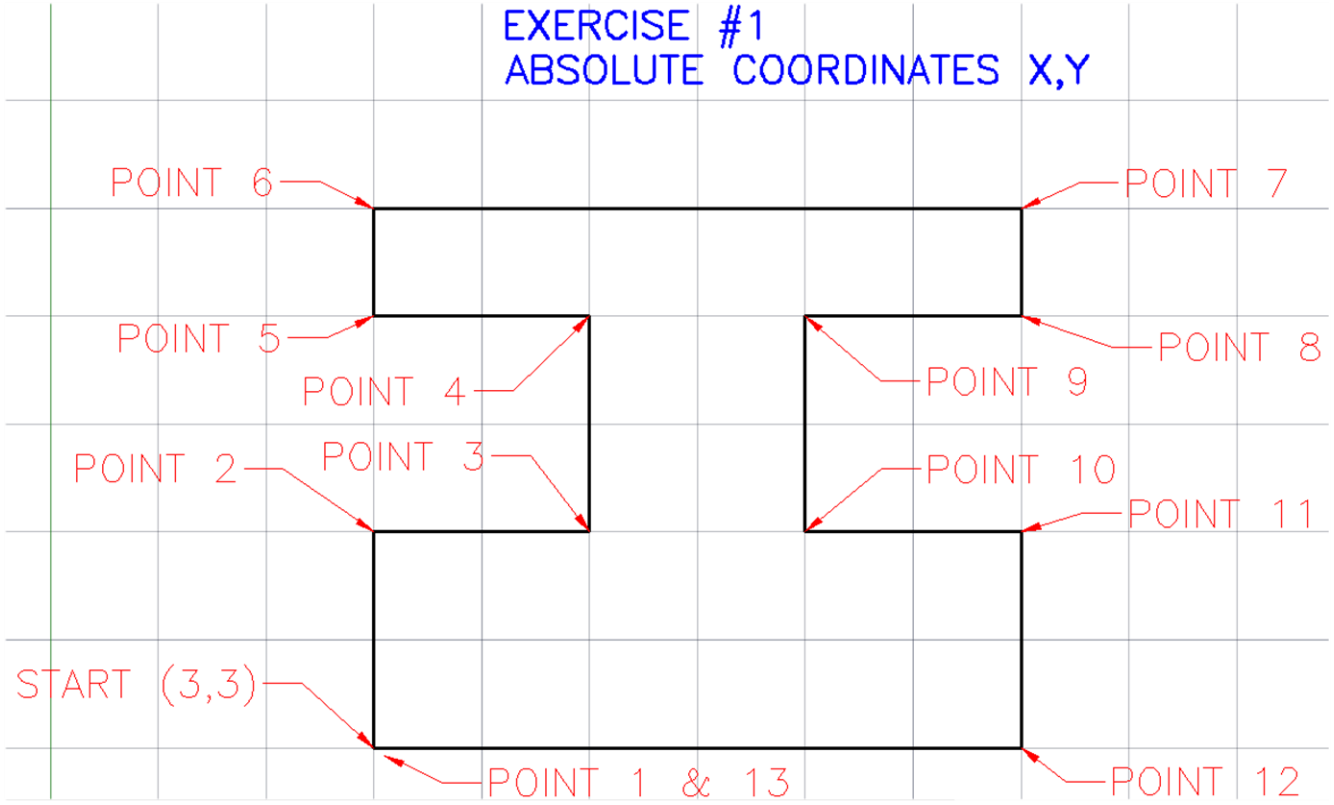


13. Click NEW, and name it NOTES.
14. Set the font to ROMANS.SHX and set the HEIGHT to .25 then pick APPLY then CLOSE.
15. Go to the ANNOTATION tab, select the MULTILINE TEXT and then SINGLE LINE text and follow directions on the command line.
16. The prompt will ask for a ROTATION ANGLE – type 0, press **ENTER**
17. Type your FULL NAME, FILE NAME, PERIOD and SEAT; press **ENTER** twice
18. **SAVE** your drawing with the proper CHS filename and be sure to put it in the correct **PERIOD FOLDER**. Remember your file name should start with CHS or PV, use EIGHT CHARACTERS and have a file NUMBER at the end e.g. CHSBRUG1 or PVPHELAN1
19. Have instructor demonstrate how to PRINT your file.

EXERCISE #1

Use Absolute Coordinate entry for this exercise. **The start point (PT1) is 3,3.** Move clockwise around the figure and determine the coordinates for each point.

Remember that absolute coordinate entry is reference from the origin (0,0) of the drawing. When you have determined the coordinates, go to the computer and prove that your coordinates will produce a figure like the one shown below. Follow the directions on the next page the dots that represent the grid are 1 unit apart.



Absolute Coordinates
Exercise #1

Name:_____

COMMAND: LINE

FROM POINT: 3,3 (PT 1)

TO POINT_____(PT 2)

TO POINT_____(PT 3)

TO POINT_____(PT 4)

TO POINT_____(PT 5)

TO POINT_____(PT 6)

TO POINT_____(PT 7)

TO POINT_____(PT 8)

TO POINT_____(PT 9)

TO POINT_____(PT 10)

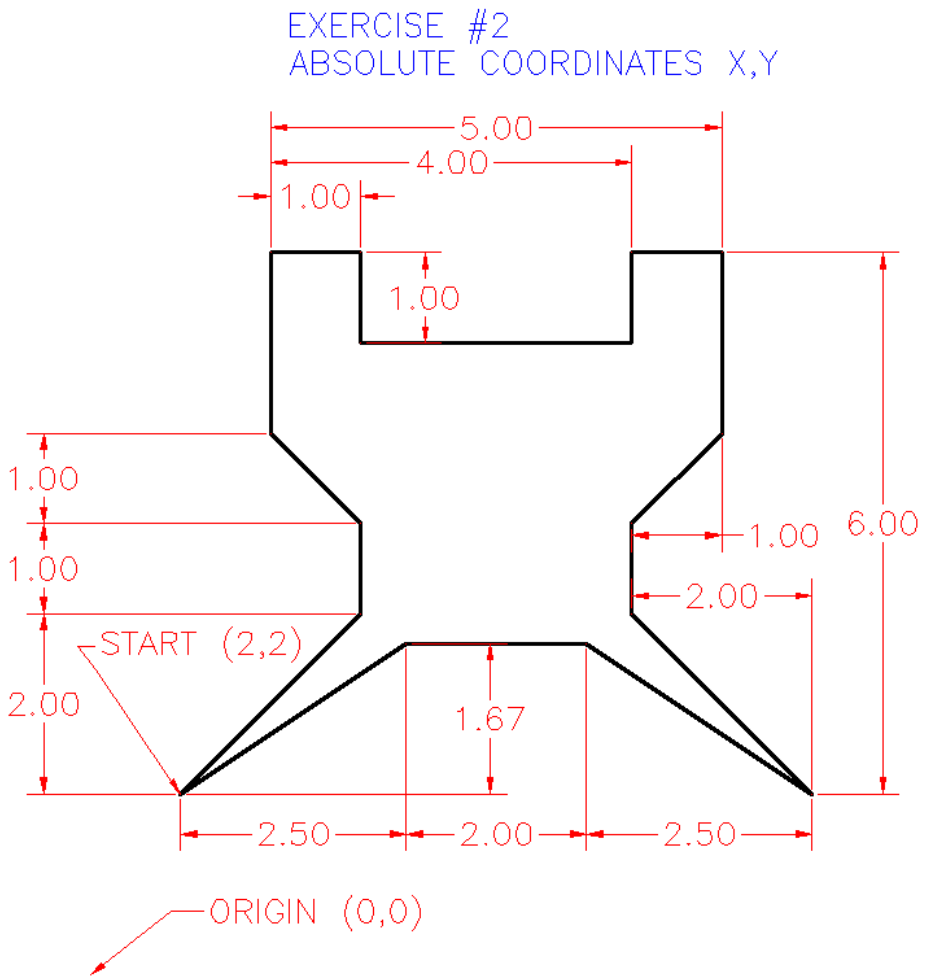
TO POINT_____(PT 11)

TO POINT_____(PT 12)

TO POINT_____(PT 13)

EXERCISE #2

Use Absolute Coordinate entry for this exercise. **The Start Point (PT 1) is 2,2.** Move clockwise around the figure and determine the coordinates for each point. Remember that Absolute Coordinate entry is referenced from the origin (0,0) of the drawing. The left and right sides of this part are symmetrical.



Absolute Coordinates
Exercise #2

Name:_____

COMMAND: LINE

FROM POINT: 2,2 (PT 1)

TO POINT_____(PT 2)

TO POINT_____(PT 3)

TO POINT_____(PT 4)

TO POINT_____(PT 5)

TO POINT_____(PT 6)

TO POINT_____(PT 7)

TO POINT_____(PT 8)

TO POINT_____(PT 9)

TO POINT_____(PT 10)

TO POINT_____(PT 11)

TO POINT_____(PT 12)

TO POINT_____(PT 13)

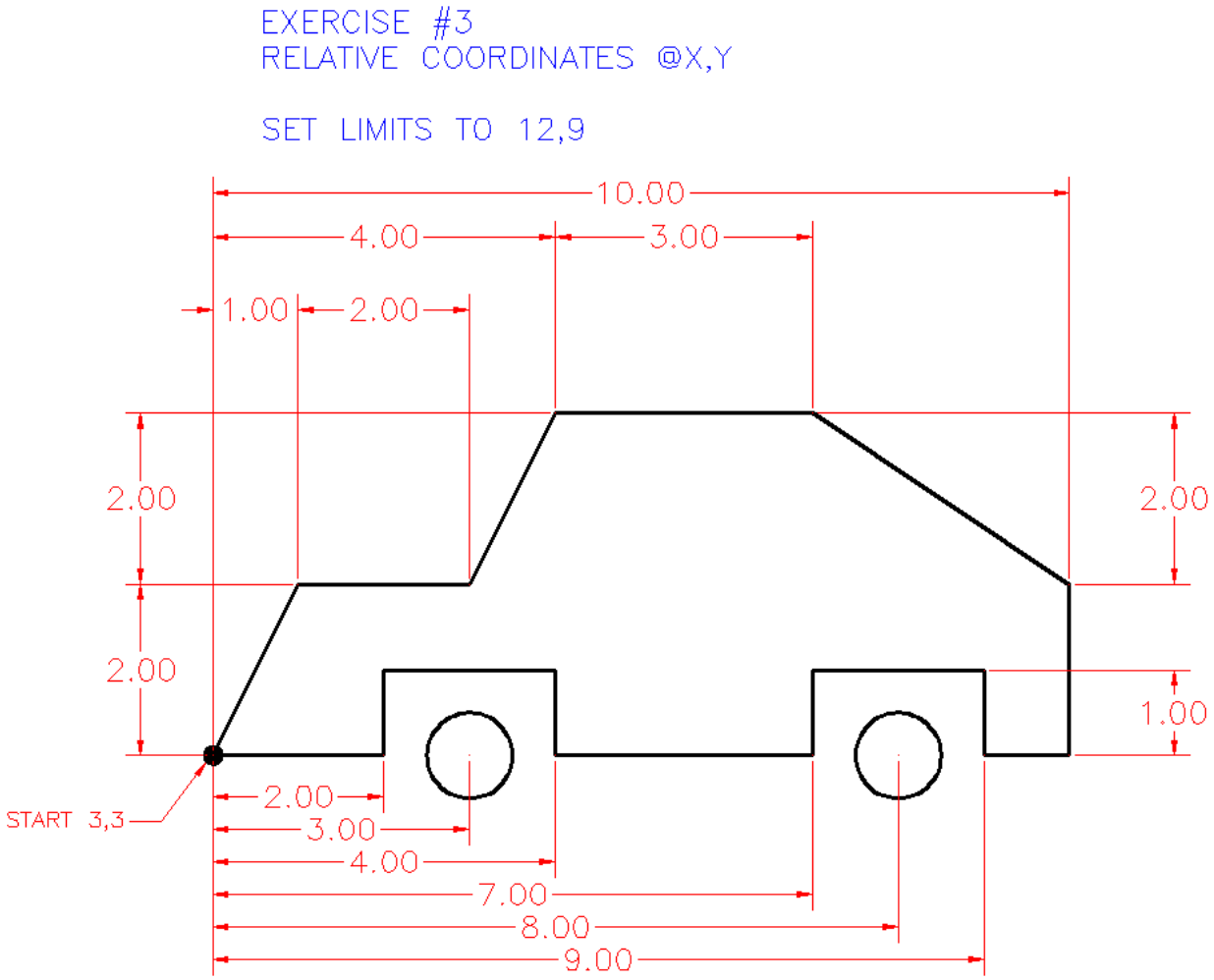
TO POINT_____(PT 14)

TO POINT_____(PT 15)

When you have determined the coordinates, go to the computer, and prove that your coordinates will produce the figure like the one shown.

EXERCISE #3

Use Relative Coordinate entry for this exercise. **The Start Point is 3,3.** Move clockwise around the figure and determine the coordinates for each point. Remember that Relative Coordinate entry is referenced from the last point entered. When you have determined the coordinates, go to the computer, and prove that your coordinates will produce the figure like the one shown.



Absolute Coordinates
Exercise #2

Name:_____

COMMAND: LINE

FROM POINT: 3,3 (PT 1)

TO POINT_____(PT 2)

TO POINT_____(PT 3)

TO POINT_____(PT 4)

TO POINT_____(PT 5)

TO POINT_____(PT 6)

TO POINT_____(PT 7)

TO POINT_____(PT 8)

TO POINT_____(PT 9)

TO POINT_____(PT 10)

TO POINT_____(PT 11)

TO POINT_____(PT 12)

TO POINT_____(PT 13)

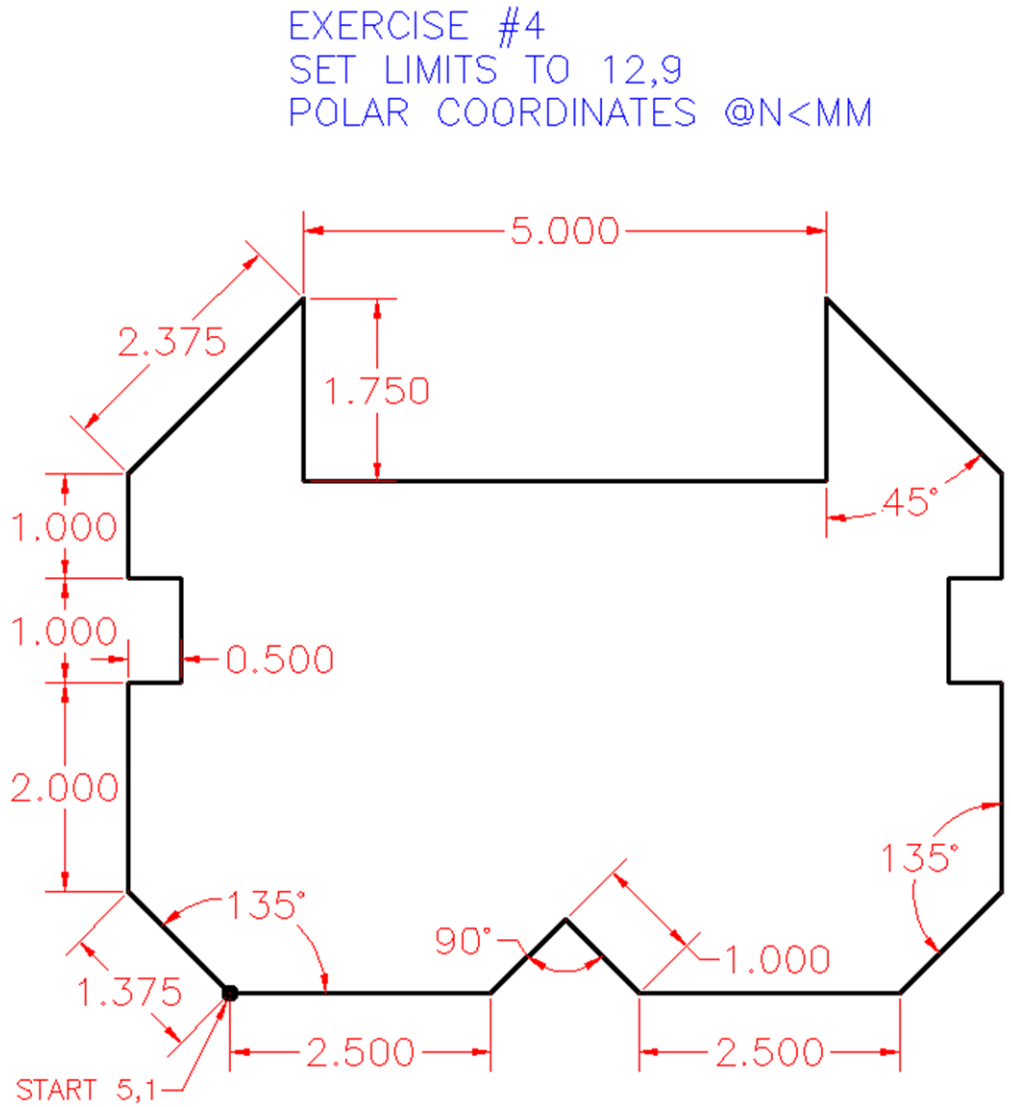
TO POINT_____(PT 14)

TO POINT_____(PT 15)

For the wheels, go to DRAW and select CIRCLE, RADIUS. Use the diagram to locate center points for each, and a radius of .5.

EXERCISE #4

Use Polar Coordinate entry for this exercise. **The Start Point is 5,1**. Move clockwise around the figure and determine the coordinates for each point. Remember that Polar Coordinate entry is reference from the last point entered. When you have determined the coordinates, go to the computer, and prove that your coordinates will produce the figure like the one shown.



Polar Coordinates
Exercise #4

Name:_____

COMMAND: LINE

FROM POINT: 5,1 (PT 1)

TO POINT_____(PT 2)

TO POINT_____(PT 3)

TO POINT_____(PT 4)

TO POINT_____(PT 5)

TO POINT_____(PT 6)

TO POINT_____(PT 7)

TO POINT_____(PT 8)

TO POINT_____(PT 9)

TO POINT_____(PT 10)

TO POINT_____(PT 11)

TO POINT_____(PT 12)

TO POINT_____(PT 13)

TO POINT_____(PT 14)

TO POINT_____(PT 15)

TO POINT_____(PT 16)

TO POINT_____(PT 17)

TO POINT_____(PT 18)

TO POINT_____(PT 19)

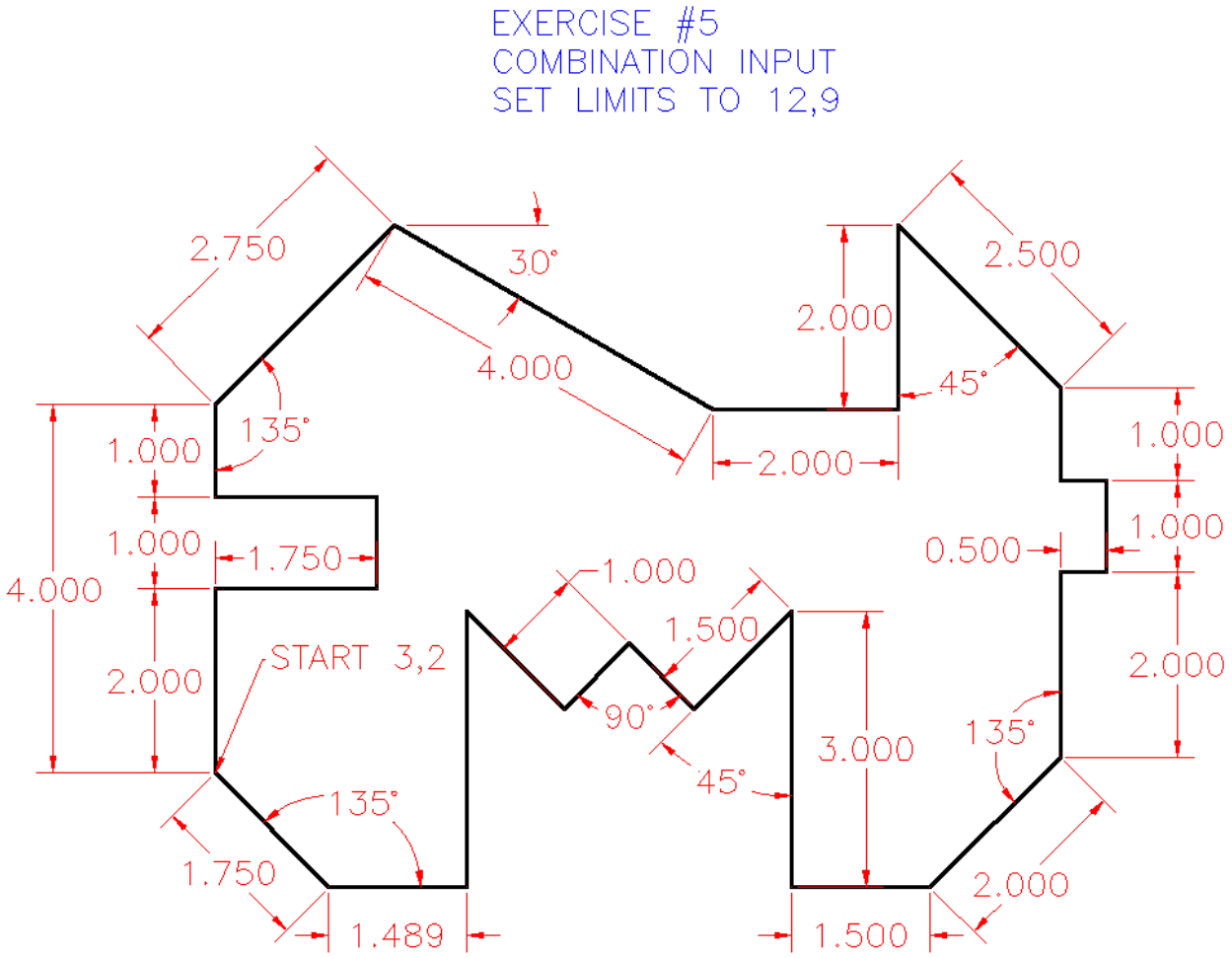
TO POINT_____(PT 20)

TO POINT_____(PT 21)

TO POINT_____(START PT)

EXERCISE #5

Use a combination of Absolute, Relative, and Polar Coordinate entry for this exercise. **The Start Point is 3,2.** Move clockwise around the figure and determine the coordinates for each point. When you have determined the coordinates, go to the computer, and prove that your coordinates will produce the figure like the one shown.



Name:_____

COMMAND: LINE

FROM POINT: 3,2 (PT 1)

TO POINT_____(PT 2)

TO POINT_____(PT 3)

TO POINT_____(PT 4)

TO POINT_____(PT 5)

TO POINT_____(PT 6)

TO POINT_____(PT 7)

TO POINT_____(PT 8)

TO POINT_____(PT 9)

TO POINT_____(PT 10)

TO POINT_____(PT 11)

TO POINT_____(PT 12)

TO POINT_____(PT 13)

TO POINT_____(PT 14)

TO POINT_____(PT 15)

TO POINT_____(PT 16)

TO POINT_____(PT 17)

TO POINT_____(PT 18)

TO POINT_____(PT 19)

TO POINT_____(PT 20)

TO POINT_____(PT 21)

TO POINT_____(PT 22)

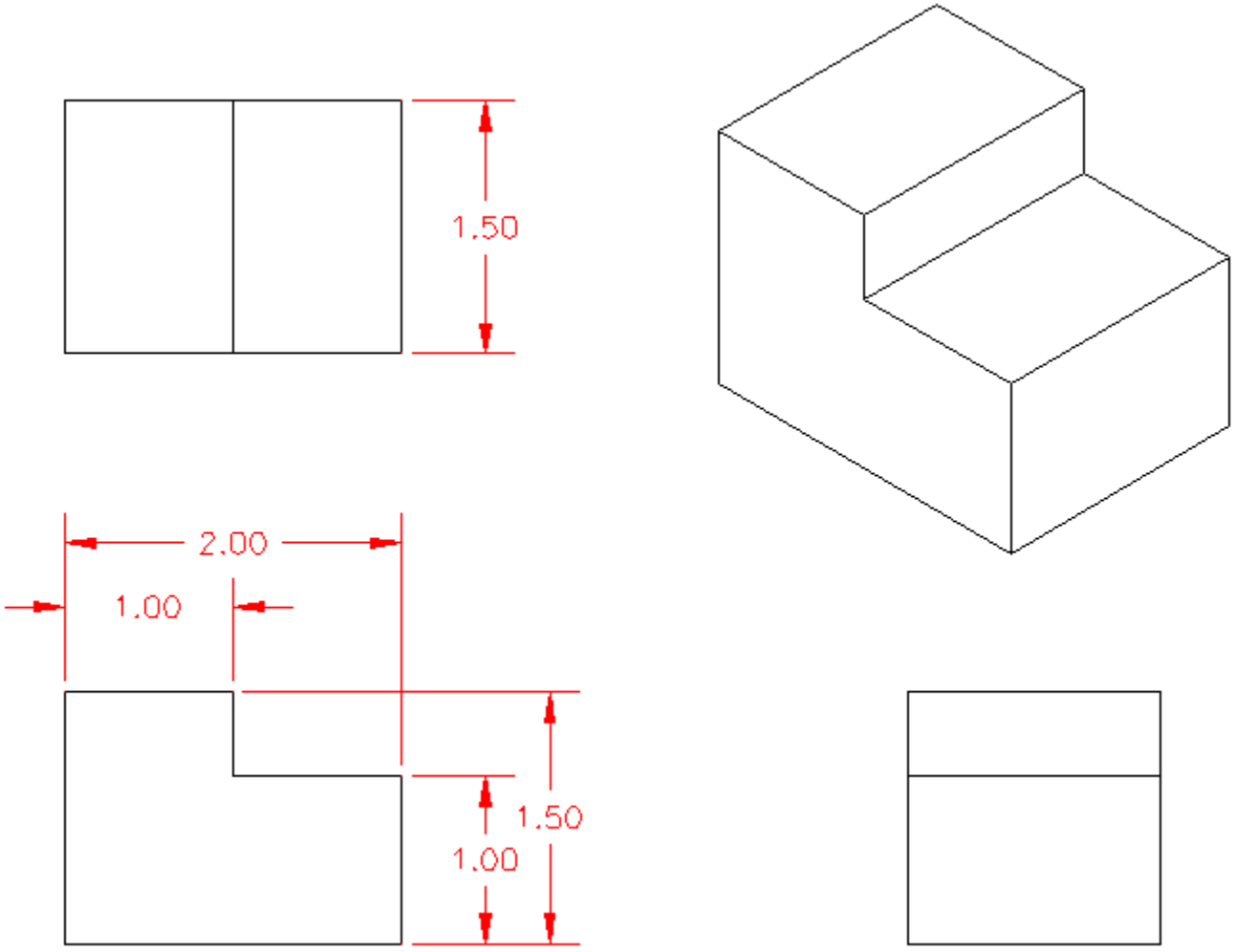
TO POINT_____(PT 23)

TO POINT_____(PT 24)

TO POINT_____(PT 25)

TO POINT_____(START PT)

PRACTICE DRAWING #1

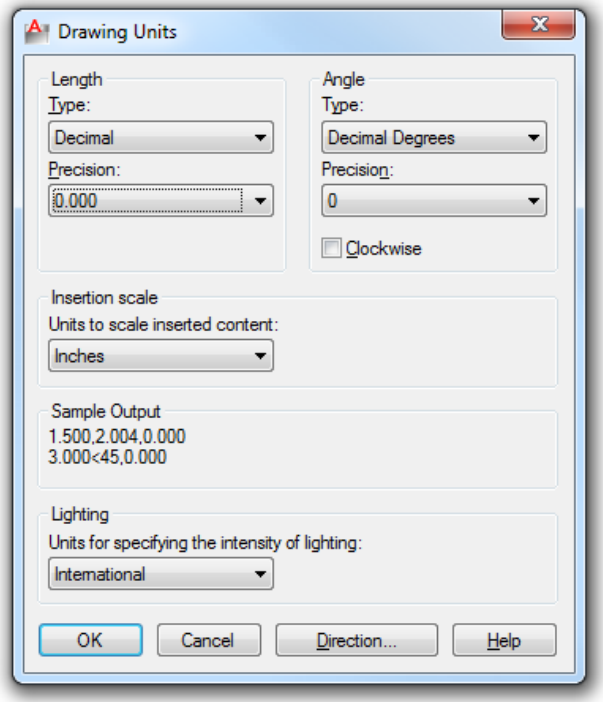


PRACTICE DRAWING NUMBER 1

1. You will start each new drawing from the **FILE** menu. If prompted, select the template you want and click **OPEN**.

2. Go to **FILE** and select **SAVE AS** and enter the name for the drawing in the **FILE NAME** dialog box. Name the drawing (e.g. CHSBRUG1 or PVPHELAN1), use at least EIGHT CHARACTERS and NO SPACES. Use CHS or PV at the beginning of ALL your file names, followed by your last initials and a drawing number. Be sure to put your drawing in the correct **PERIOD FOLDER**.

3. Go to the **FORMAT** menu and select **UNITS**. This will bring up the DRAWING UNITS dialog box.



4. Set the **TYPE** to **DECIMAL** and set the number of digits to **0.000**.

5. For angles, select **DECIMAL DEGREES**.

6. Set angular **PRECISION** display to **0**.

7. Select the **DIRECTION** button at the bottom of the dialog box. Set the direction for angle **0** to be **EAST.** *This may already be the default value*.

8. Select the way that you want the angles to be measured, clockwise or counterclockwise. For this drawing, the setting should be **COUNTERCLOCKWISE**.

9. Make sure that the Insertion Scale is set to **INCHES**, and for now we will leave the Lighting set to **INTERNATIONAL**.

10. Select **OK** to close the DIRECTION and DRAWING UNITS dialog boxes.

11. From the FORMAT menu, select DRAWING LIMITS. The limits will be different for each drawing depending on the paper size.

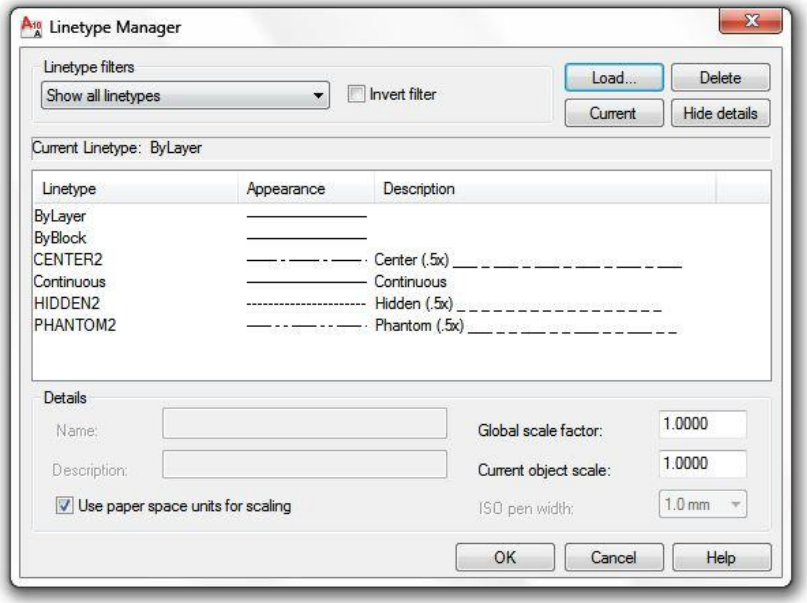
    a. For this drawing, set the lower left corner at **0,0** (default). **ENTER**

    b. Set the upper right corner to **12,9** (default). **ENTER**

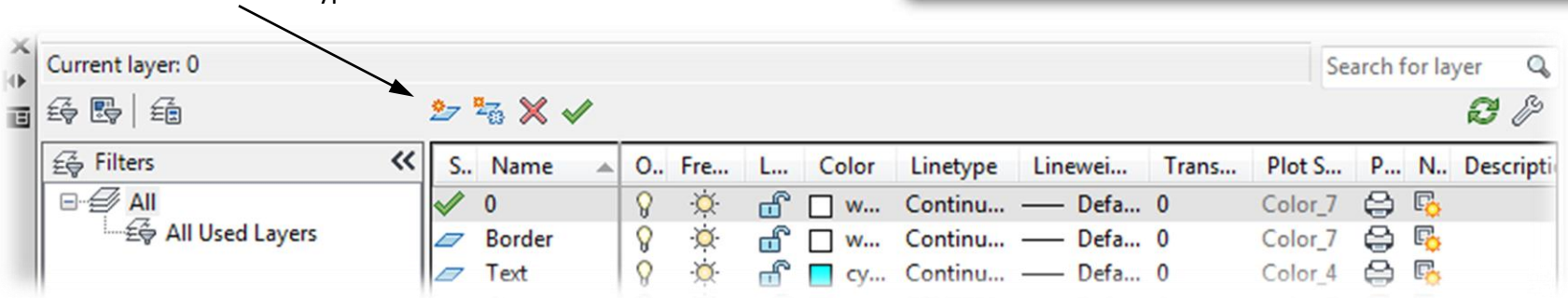
12. From the **VIEW** menu, **ZOOM ALL** to have the screen reflect the changes that were just made.

13. Right-click on the UCS icon in the lower left corner,  , and select **WORLD**.

14. Go to the **FORMAT** menu and select **LINETYPE**.
    a. Select LOAD
    b. Highlight CENTER2, HIDDEN2, and PHANTOM2 (hold the Ctrl [control] key to select them all at once) then select OK
    c. Select OK again if your lines were properly loaded
15. Go to the **TOOLS** menu and select **DRAFTING SETTINGS.**
16. Set GRID and SNAP to appropriate increments
17. In this case: X SPACING = .25 and Y SPACING = .25.
18. DO NOT turn on SNAP, just pick OK (snap and
    a. grid can be turned on at the bottom of the CAD screen).
19. Set MAJOR LINE = 4.

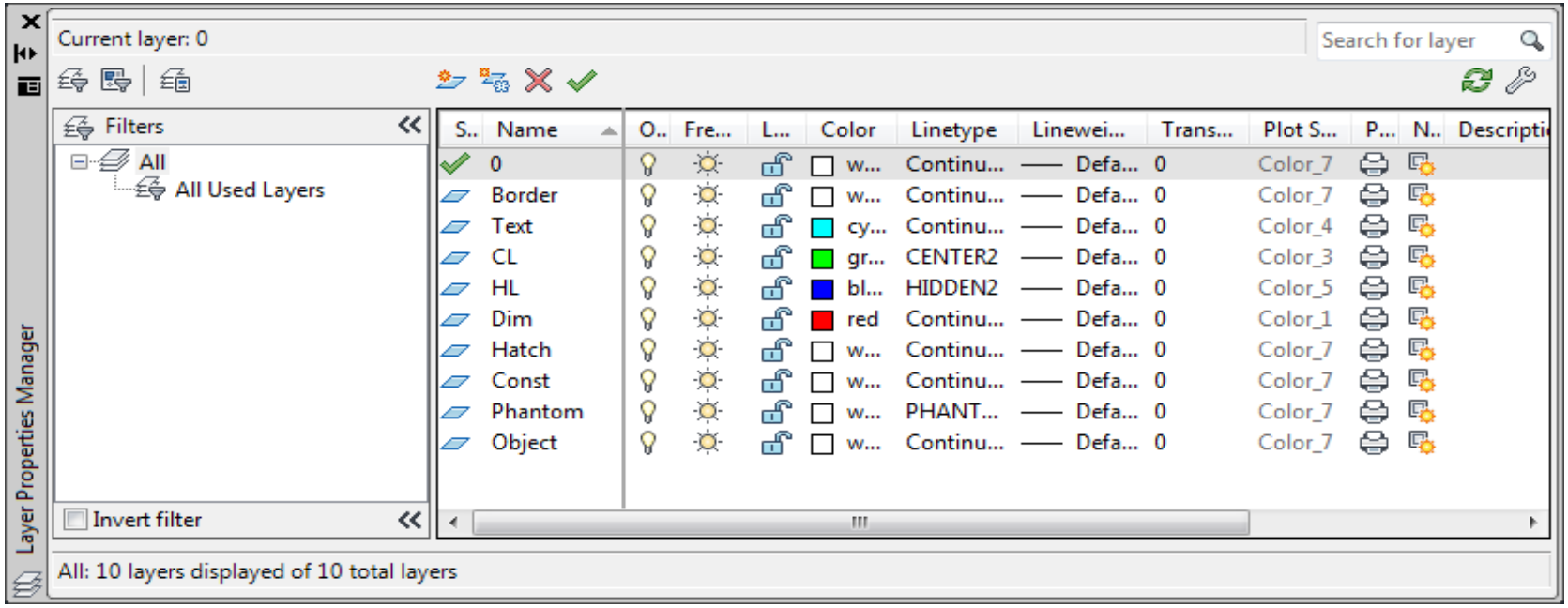


20. Under the **FORMAT** tab, click **Layer…**
21. Click **NEW LAYER** and type **BORDER** in the **NAME BOX.**



22. Continue this process until you have created a **NEW LAYER** for each item listed below. Select each layer individually and set the correct color by selecting the **COLOR** menu (the colored squares). Also set the correct linetype by selecting the **LINETYPE** menu. Set each layer according to the list below.

LAYER NAME	**COLOR**	**LINETYPE**
1. 0	White	Continuous
2. Border	White	Continuous
3. Text	Cyan	Continuous
4. CL	Green	CENTER2
5. HL	Blue	Hidden2
6. Dim	Red	Continuous
7. Hatch	Any color	Continuous
8. Const	White	Continuous
9. Phantom	White	Phantom2
10. Object	White	Continuous



23. Highlight the **OBJECT** layer, then pick the **CURRENT** button (green checkmark). You will see a checkmark appear next to **OBJECT**.
24. Click the **X** in the corner to close the window
25. Type **Z**, ENTER, **A**, ENTER. This performs a Zoom All.
26. Select **SAVE** from the **FILE** menu to save all the parameters you have created. Make sure to save regularly.
27. Now you will start constructing the orthographic views (3 views) of the block.
28. Select the function key **F6**. This turns the coordinates ON if they were OFF or OFF if they were ON. You want the coordinate readout at the bottom of the screen to be ON so that as you move the pointing device, it registers the current position of the crosshairs.

FRONT VIEW

1. The first view you will create is the front view.
2. From the HOME tab, select **LINE.**
3. You are asked for the FIRST POINT. From the keyboard, type the absolute coordinate 2,2 then press **ENTER**. These are Absolute Coordinates which use the drawing's origin of 0,0 as the reference point.
4. You are asked for the **NEXT POINT**. Type the Polar Coordinate **@1.5<90 (ENTER)**. These are polar coordinates to draw a line relative from the last point 1.50 units at an angle of 90 degrees.
5. The prompt at the bottom of the screen is: **NEXT POINT**. Type the Polar Coordinate **@1<0 (ENTER)**
6. The prompt: **NEXT POINT**. Type the Polar Coordinate **@.5<270 (ENTER)**
7. The prompt: **NEXT POINT**. Type the Polar Coordinate **@1<0 (ENTER)**
8. The prompt: **NEXT POINT**. Type the Polar Coordinate **@1<270 (ENTER)**
9. The prompt: **NEXT POINT**. Type the Polar Coordinate **@2<180 (ENTER) (ENTER)** [hit the **ENTER** key twice]
10. You will see on your screen that you have created the geometry that represents the Front View of the block.

11. SAVE your drawing to your file

TOP VIEW

1. Now you will create the geometry for the Top View.
2. From the **HOME** tab, select **LINE.**
3. You are asked for the **FIRST POINT**. From the keyboard, type the absolute coordinate **2,5.5 (ENTER)**
4. You are asked for the **NEXT POINT**. Type the Relative Coordinate **@0,1.5 (ENTER)**. This is a Relative Coordinate to draw a line relative from the last point moving zero units in **X** and 1.5 units in **Y.**
5. The prompt **NEXT POINT**. Type the Relative Coordinate: **@2,0 (ENTER)**
6. The prompt **NEXT POINT**. Type the Relative Coordinate: **@0,-1.5 (ENTER)**
7. The prompt **NEXT POINT**. Type the Relative Coordinate: **@-2,0 (ENTER) (ENTER)** [hit **ENTER** key twice]
8. Select **LINE** again.
9. The prompt **FIRST POINT**. Type the Absolute Coordinate: **3,5.5 (ENTER)**
10. The prompt **NEXT POINT**. Type the Relative Coordinate: **@0,1.5 (ENTER) (ENTER)**
11. You now have created the geometry that represents the top view of the block.
12. **QUICK SAVE** your drawing to your file.

RIGHT SIDE VIEW

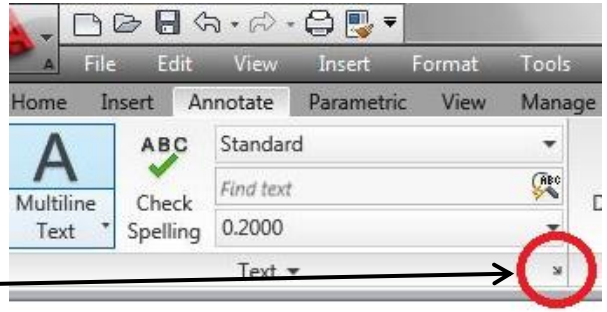
1. Now you will create the geometry that creates the right side view.
2. From the **HOME** tab, select **LINE**.
3. The prompt: **FIRST POINT**. Type the Absolute Coordinate: **7,2 (ENTER)**
4. The prompt: **NEXT POINT**. Type the Polar Coordinate: **@1.5<90 (ENTER)**

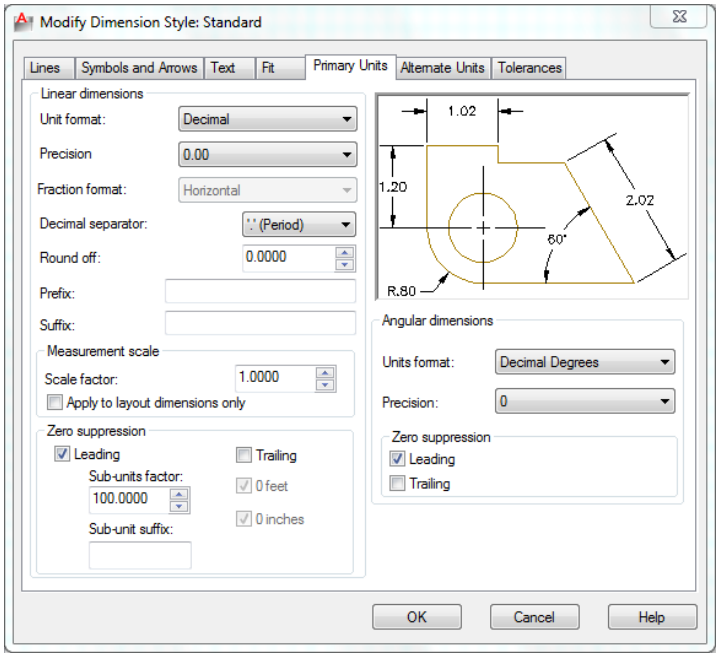
5. The prompt: **NEXT POINT**. Type the Polar Coordinate: **@1.5<0 (ENTER)**
6. The prompt: **NEXT POINT**. Type the Relative Coordinate: **@0,-1.5 (ENTER)**
7. The prompt: **NEXT POINT**. Type the Polar Coordinate: **@1.5<180 (ENTER) (ENTER)**
8. Select **LINE** again.
9. The prompt: **FIRST POINT**. Type the Absolute Coordinate: **7,3 (ENTER)**
10. The prompt: **NEXT POINT**. Type the Polar Coordinate: **@1.5,0 (ENTER) (ENTER)**
11. You have created the geometry for the right side view.
12. **QUICK SAVE** your drawing to your file.

DIMENSIONING

1. From the **ANNOTATE** tab, expand the **TEXT STYLE** menu

(click the tiny arrow in the corner of the Text bar)





2. Click NEW, and type DIMENSION for the name.
3. Set font to **ROMANS.SHX**, set height to **.125**, click **APPLY** then **CLOSE**.
4. Also under the ANNOTATE tab, expand the DIMENSION STYLE menu (tiny arrow again) in the Dimensions bar.
5. Click NEW, type CHS or a FILE NAME then click CONTINUE.
6. Click on the PRIMARY UNITS tab, change the settings to the following:
    a. Units: Decimal
    b. Precision: 0.00
    c. Zero suppression: Leading Zeros

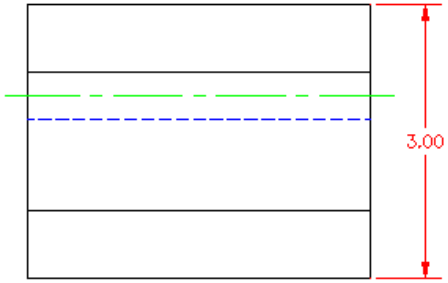
7. Pick the FIT tab – don't change anything, but notice how you can change the arrangement of the dimensions.
8. Pick the TEXT tab, make sure that the Text Alignment is Horizontal and change Text Style to Dimension.
9. Pick the **SYMBOLS AND ARROWS** tab, change the CENTER Marks for Circles to **LINES**.
10. Click **OK**, change the new Dimension Style to current by clicking on the **SET CURRENT** button, then **CLOSE**.
11. Under the **HOME** tab and in the **LAYERS** box, change the layer to **DIM**.
12. Right click on the **OSNAP** button on the bottom of the screen, then pick **Settings…**

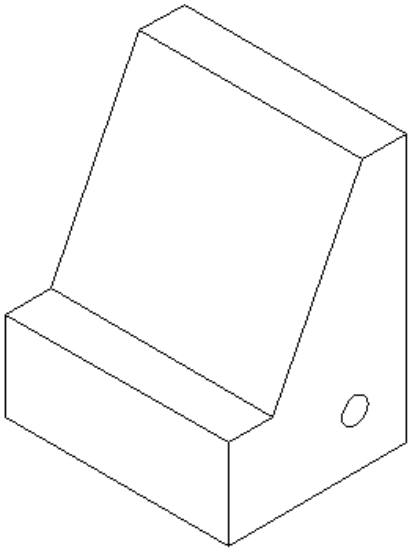
13. Turn on the **INTERSECTION** tool by clicking the box next to it.
14. Pick **OK** to return to your drawing.
15. Under the **ANNOTATE** tab, pick the DIMENSION pull-down menu and pick **LINEAR**.
16. You will be asked for the FIRST EXTENSION LINE ORIGIN OR <SELECT OBJECT>.
17. Pick the intersection at the lower right corner of the Front view. Make sure that the intersection is within the box within the crosshairs.
18. You will be asked for the SECOND EXTENSION LINE ORIGIN OR <SELECT OBJECT>.
19. Pick the intersection directly above the one you picked in step 17.
20. Press the function key **F9** – this will turn the SNAP TO GRID **ON.**
21. You will be asked for the DIMENSION LINE LOCATION [Text/Angle]: Pick the first grid point (dot) that is to the right of the intersection you selected.
22. Press **F9** again, turning Snap to Grid **OFF**.
23. Go to the ANNOTATE tab and under Dimensions, go to CONTINUE and select **BASELINE**.
24. The prompt: SECOND EXTENSION LINE ORIGIN OR [UNDO/SELECT]. Pick the intersection on the right side of the top horizontal line. Press **ENTER TWICE**.
25. Pick **DIMENSION → LINEAR**

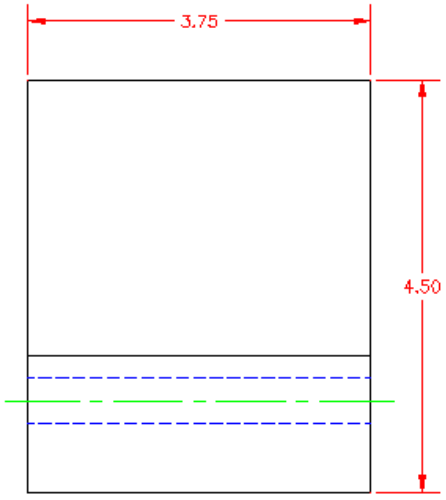
26. You are asked for the FIRST EXTENSION LINE ORIGIN.
27. Pick the intersection at the top let corner of the FRONT VIEW.
28. The prompt: SECOND EXTENSIONLINE ORIGIN OR RETURN TO SELECT:
29. Pick the intersection in the front view to the right of last point you selected.
30. Press the F9 key and turn Snap to Grid **ON**.
31. You will be asked for the DIMENSION LINE LOCATION [Text/Angle]: Pick the grid pint that is just above the last intersection that you just selected.
32. Pick **DIMENSION → BASELINE**
33. You are asked for the SECOND EXTENSION LINE ORIGIN:
34. Pick the top intersection that was used for the **1.00** unit VERTICAL DIMENSION. A second dimension of **2.00** should appear on top of your first dimension.
35. Press **ENTER TWICE** to accept this value.
36. SAVE your drawing to your file.
37. Pick **DIMENSION → LINEAR**
38. You will be asked for the FIRST EXTENSION LINE ORIGIN or SELECT OBJECTS.
39. Pick the intersection that is the corner at the lower right side of the top view.
40. You are asked for the SECOND DIMENSION LINE ORIGIN.
41. Pick the intersection that is the corner directly above the last point you selected.
42. You will be asked for the DIMENSIONLINE LOCATION [Text/Angle]: Pick the first grid point (dot) that is to the right of the intersection that you selected as the SECOND EXTENSION LINE ORIGIN.
43. Pick the OBJECT layer from the Layer pull-down list.
44. Under the **OSNAP** settings, turn off the **INTERSECTION** tool.

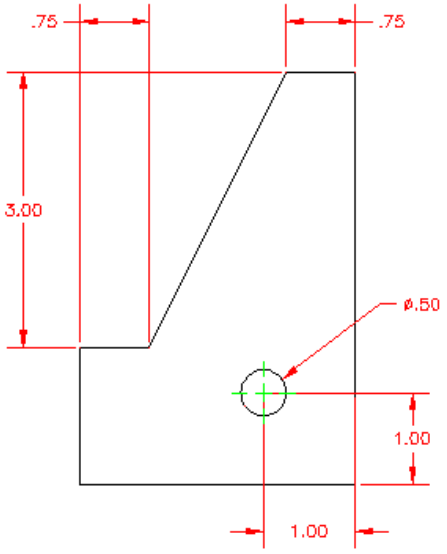
45. **CONGRATULATIONS**, you have just completed your first ORTHOGRAPHIC DRAWING using AutoCAD. **SAVE** your drawing to your file.
46. **BACK UP** your drawing files to a disk **EACH DAY.**

PRACTICE DRAWING #2







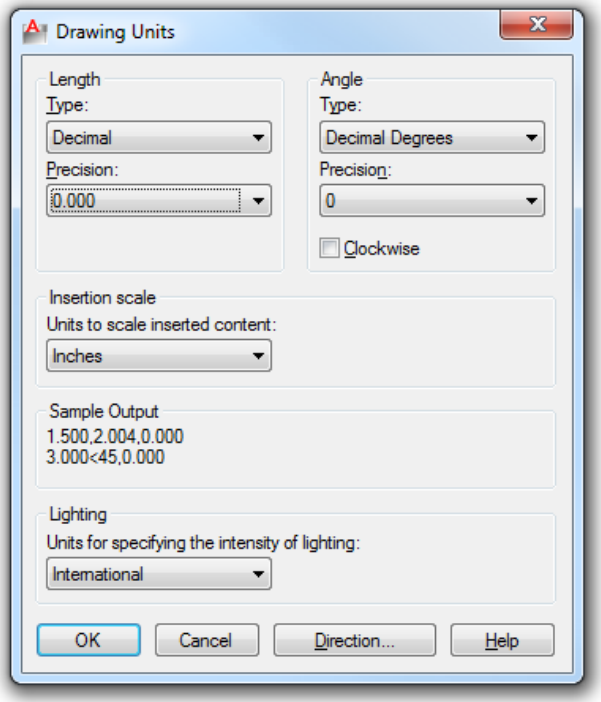


PRACTICE DRAWING NUMBER 2

1. You will start each new drawing from the **FILE** menu. If prompted, select the template you want and click **OPEN**.

2. Go to **FILE** and select **SAVE AS** and enter the name for the drawing in the **FILE NAME** dialog box. Name the drawing (e.g. CHSBRUG1 or PVPHELAN1), use at least EIGHT CHARACTERS and NO SPACES. Use CHS or PV at the beginning of ALL your file names, followed by your last initials and a drawing number. Be sure to put your drawing in the correct **PERIOD FOLDER**.

3. Go to the **FORMAT** menu and select **UNITS**. This will bring up the DRAWING UNITS dialog box.



4. Set the **TYPE** to **DECIMAL** and set the number of digits to **0.000**.

5. For angles, select **DECIMAL DEGREES**.

6. Set angular **PRECISION** display to **0**.

7. Select the **DIRECTION** button at the bottom of the dialog box. Set the direction for angle **0** to be **EAST.** *This may already be the default value*.

8. Select the way that you want the angles to be measured, clockwise or counterclockwise. For this drawing, the setting should be **COUNTERCLOCKWISE**.

9. Make sure that the Insertion Scale is set to **INCHES**, and for now we will leave the Lighting set to **INTERNATIONAL**.

10. 9. Select **OK** to close the DIRECTION and DRAWING UNITS dialog boxes.

11. From the FORMAT menu, select DRAWING LIMITS. The limits will be different for each drawing depending on the paper size.

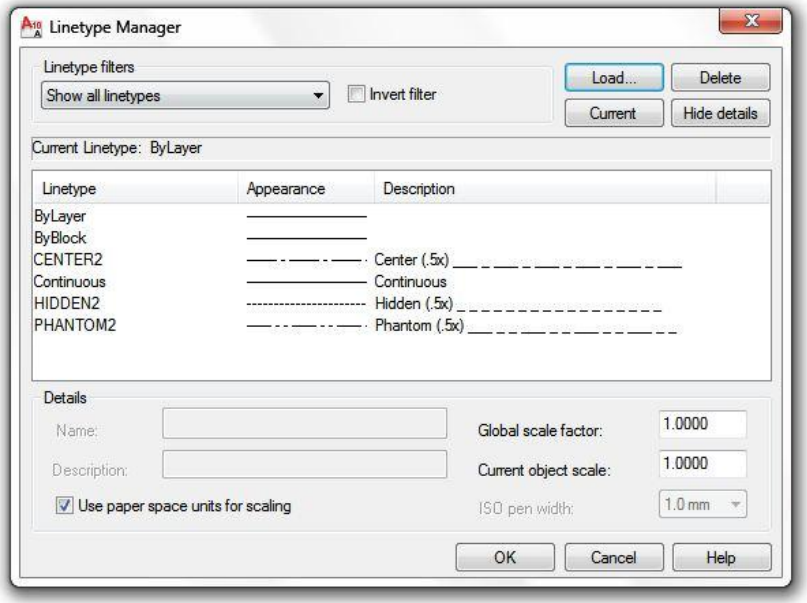
    a. For this drawing, set the lower left corner at **0,0** (default). **ENTER**

    b. Set the upper right corner to **12,9** (default). **ENTER**

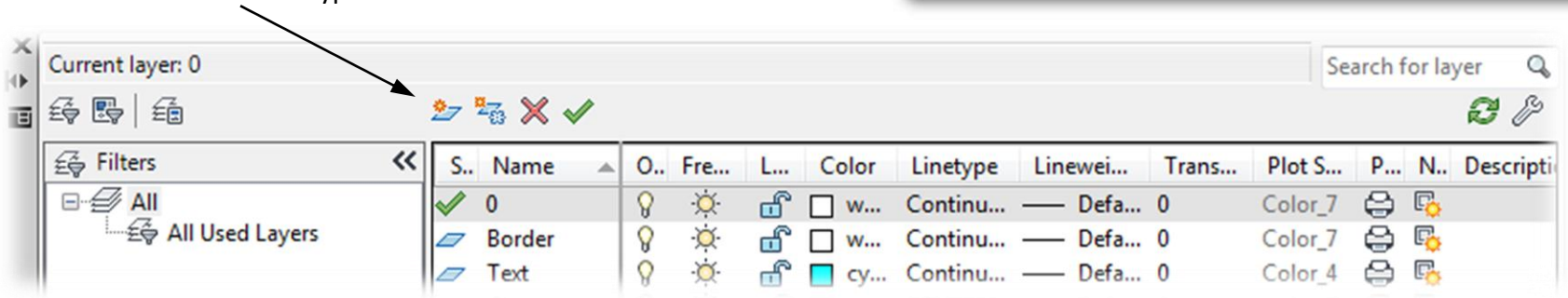
12. From the **VIEW** menu, **ZOOM ALL** to have the screen reflect the changes that were just made.

13. Right-click on the UCS icon in the lower left corner,  , and select **WORLD**.

14. Go to the **FORMAT** menu and select **LINETYPE**.
    A. Select LOAD
    B. Highlight CENTER2, HIDDEN2, and PHANTOM2 (hold the Ctrl [control] key to select them all at once) then select OK
    C. Select OK again if your lines were properly loaded
15. Go to the **TOOLS** menu and select **DRAFTING SETTINGS.**
16. Set GRID and SNAP to appropriate increments
17. In this case: X SPACING = .25 and Y SPACING = .25.
18. DO NOT turn on SNAP, just pick OK (snap and
    A. grid can be turned on at the bottom of the CAD screen).
19. Set MAJOR LINE = 4.

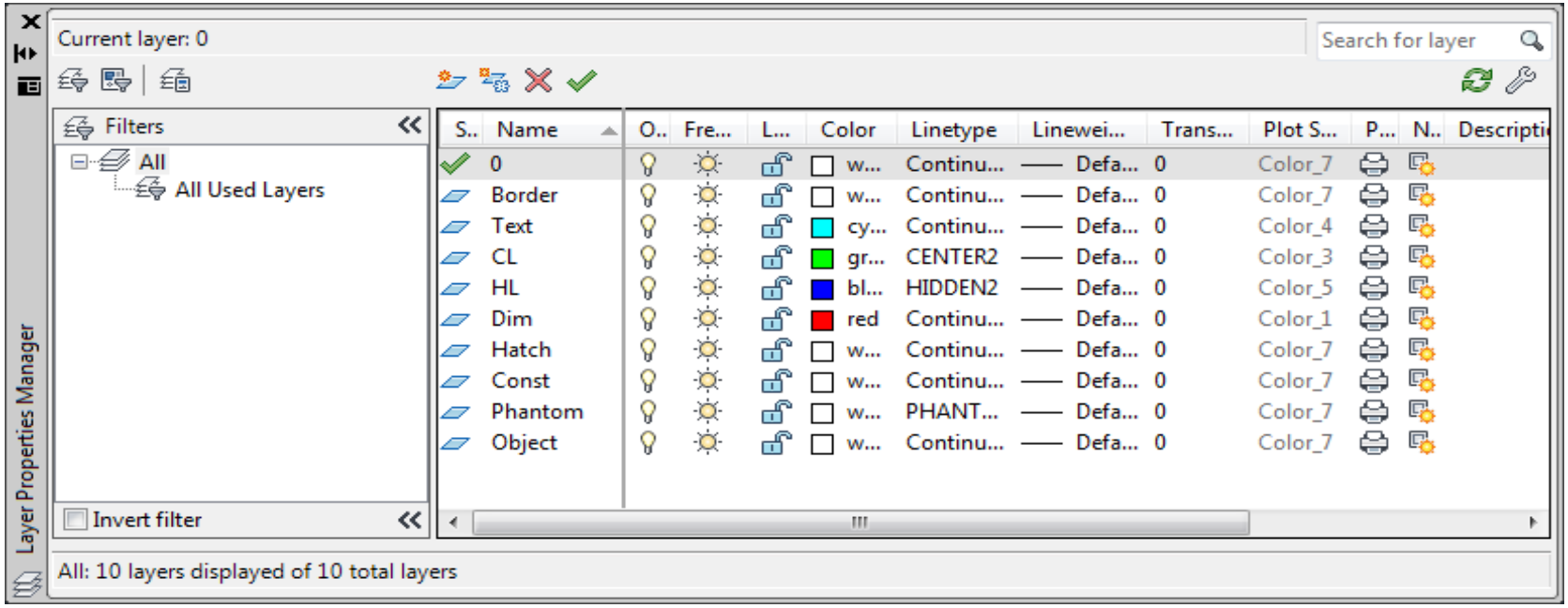


20. Under the **FORMAT** tab, click **Layer…**
21. Click **NEW LAYER** and type **BORDER** in the **NAME BOX.**



22. Continue this process until you have created a **NEW LAYER** for each item listed below. Select each layer individually and set the correct color by selecting the **COLOR** menu (the colored squares). Also set the correct linetype by selecting the **LINETYPE** menu. Set each layer according to the list below.

LAYER NAME	**COLOR**	**LINETYPE**
1. 0	White	Continuous
2. Border	White	Continuous
3. Text	Cyan	Continuous
4. CL	Green	CENTER2
5. HL	Blue	Hidden2
6. Dim	Red	Continuous
7. Hatch	Any color	Continuous
8. Const	White	Continuous
9. Phantom	White	Phantom2
10. Object	White	Continuous

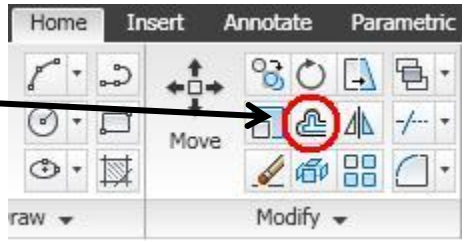


18. Highlight the **OBJECT** layer, then pick the **CURRENT** button (green checkmark). You will see a checkmark appear next to **OBJECT**.
19. Click the **X** in the corner to close the window
20. Type **Z**, ENTER, **A**, ENTER. This performs a Zoom All.
21. Select **SAVE** from the **FILE** menu to save all the parameters you have created. Make sure to save regularly.
22. Now you will start constructing the orthographic views (3 views) of the block.
23. Select the function key **F6**. This turns the coordinates ON if they were OFF or OFF if they were ON. You want the coordinate readout at the bottom of the screen to be ON so that as you move the pointing device, it registers the current position of the crosshairs.

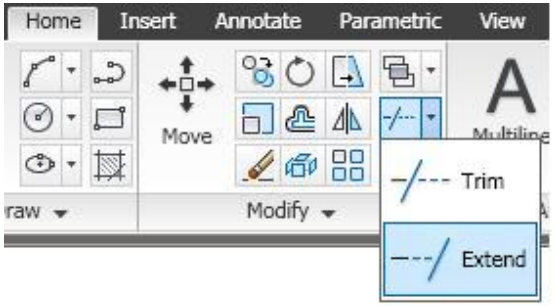
FRONT VIEW

1. The first view you will create is the Front View.
2. Click **LINE** on the HOME tab.
3. The prompt: **FROM POINT** type the Absolute Coordinate: **1.5,1.5 (ENTER)**
4. The prompt: **TO POINT** type the Polar Coordinate: **@4.5<90 (ENTER)**
5. The prompt: **TO POINT** type the Relative Coordinate: **@3.75,0 (ENTER)**
6. The prompt: **TO POINT** type the Polar Coordinate: **@4.5<270 (ENTER)**
7. The prompt: **TO POINT** type the Relative Coordinate: **@-3.75<0 (ENTER) (ENTER)**
8. Click **LINE** again.
9. The prompt: **FROM POINT** type the Absolute Coordinate: **1.5,3.0 (ENTER)**
10. The prompt: **TO POINT** type the Polar Coordinate: **@3.75<0 (ENTER) (ENTER)**
11. Select the **HL** layer on the Layers pull-down menu
12. Click **LINE** again.

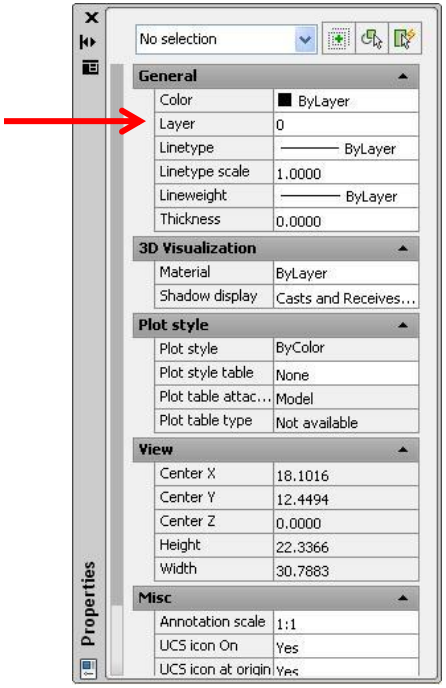
13. The prompt: **FROM POINT** type the Absolute Coordinate: **1.5,2.50 (ENTER)**
14. The prompt: **TO POINT** type the Relative Coordinate: **@3.75,0 (ENTER) (ENTER)**
15. Under the HOME tab, go to the MODIFY box and click **OFFSET**



16. The prompt: SPECIFY OFFSET DISTANCE OR [THROUGH/ERASE/LAYER] <THROUGH>: type **.25 (ENTER)**
17. The prompt: SELECT OBJECT TO OFFSET OR [EXIT/UNDO] <EXIT>: You will see a small box where the crosshairs were. This is called the **PICK BOX**. Pick the dashed line you just created
18. The prompt: SPECIFY POINT ON SIDE TO OFFSET OR [EXIT/MULTIPLE/UNDO] <EXIT>: Pick a point anywhere above the dashed line
19. The prompt: SELECT OBJECT TO OFFSET: Pick the same dashed line that you did in step 17.
20. The prompt: SPECIFY POINT ON SIDE TO OFFSET: Pick a point anywhere below the dashed line you just selected. **(ENTER)**
21. **QUICK SAVE** your drawing to your file
22. Click **OFFSET** again
23. The prompt: SPECIFY OFFSET DISTANCE OR [THROUGH/ERASE/LAYER] <0.25>: **(ENTER)**. This will accept the value that is in the brackets (< >) as the value to use. This command, like many others, will retain the last value entered.
24. The prompt: SELECT OBJECT TO OFFSET: Pick the left vertical solid line of your drawing
25. The prompt: SPECIFY POINT ON SIDE TO OFFSET: Pick anywhere to the left of the vertical solid line you selected
26. The prompt: SELECT OBJECT TO OFFSET: Pick the right vertical solid line
27. The prompt: SPECIFY POINT ON SIDE TO OFFSET: Pick anywhere to the right of the vertical solid line you just selected **(ENTER)**
28. In the MODIFY box, click the pull-down next to the **TRIM** button, and select **EXTEND**. →



29. The prompt: SELECT OBJECTS OR <SELECT ALL>: Pick the two vertical solid lines that were offset, outermost left and outermost right **(ENTER)**. These are used as boundaries to extend to.
30. The prompt: SELECT OBJECT TO EXTEND… : Pick the middle dashed line to the left of the midpoint position, then to the right of the midpoint position. **(ENTER)** This will have extended the dashed line to the two vertical solid lines that were offset.
31. ERASE the two outer boundary lines by **PICKING** and **DELETING** or by using the **ERASE** tool in the **MODIFY** box.
32. Pick the center line.

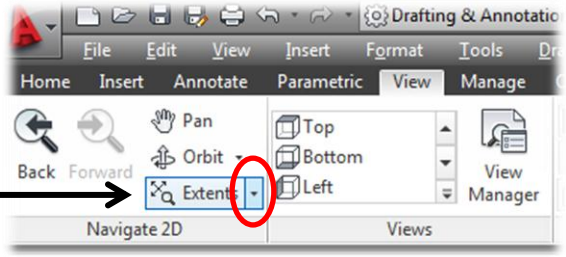


33. Under the MODIFY menu, select **PROPERTIES**. This will bring up the Properties box. This box will allow you to change COLOR, LAYER, LINETYPE, or the THICKNESS of entities.
34. Change the layer by clicking the name and selecting **CL** from the pull-down menu. Close the properties box.
35. You will see on the screen that you have created the geometry that represents the Front View of the wedge.
36. Type **REGEN (ENTER)**
37. SAVE your drawing to your file.

TOP VIEW

1. Select the **OBJECT LAYER** in the layer pull-down menu
2. Under the HOME tab, click **LINE**
3. The prompt: **FROM POINT** type the Absolute Coordinate **1.5,7 (ENTER)**
4. The prompt: **TO POINT: @0,3 (ENTER)**
5. The prompt: **TO POINT: @3.75<0 (ENTER)**

6. The prompt: **TO POINT: @3<270 (ENTER)**
7. The prompt: **@-3.75,0 (ENTER) (ENTER)**
8. Under the VIEW tab, select the pull-down menu in the **NAVIGATE 2D** box, and select **ALL.**



9. Pick the **OFFSET** tool on the HOME tab
10. The prompt: SPECIFY OFFSET DISTANCE: type **.75 (ENTER)**
11. The prompt: SELECT OBJECT TO OFFSET: pick the bottom horizontal line in the Top View
12. The prompt: SPECIFY POINT ON SIDE OF OBJECT TO OFFSET: pick anywhere between the top horizontal line and the bottom horizontal line in the Top View
13. The prompt: SELECT OBJECT TO OFFSET: pick the top horizontal line in the Top View
14. The prompt: SIDE OF OBJECT: pick just below the top horizontal line in the top view **(ENTER)**
15. In the **MODIFY** box, click the **COPY** tool:  Select the bottom two dashed lines (the center line and the one below it) in Front View **(ENTER)**
16. The prompt: SPECIFY BASE POINT OR [DISPLACEMENT/MODE] <DISPLACEMENT>: Pick **OBJECT SNAP – ENDPOINT** using the bottom toolbar only. You will see a small box in the corner of the crosshairs. Position this box on the left endpoint of the lower dashed line of Front View and pick this point
17. The prompt: SPECIFY SECOND BASE POINT: type **1.5,8.75 (ENTER)**
18. You will see that you have created the geometry that represents the Top View of the wedge
19. **QUICK SAVE** your drawing to your file

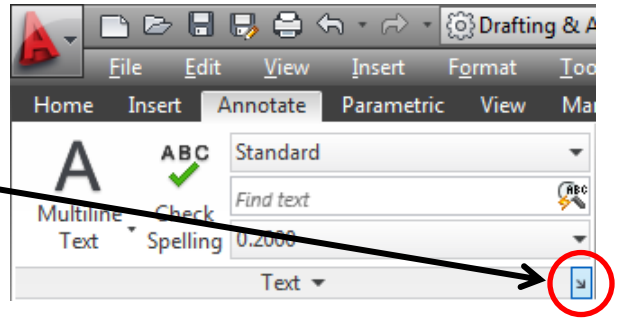
<u>Right Side View</u>

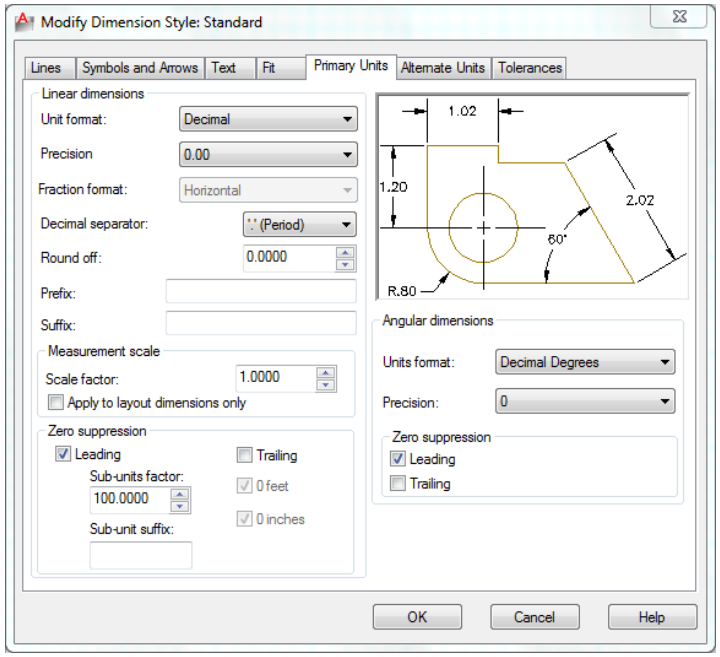
1. Now you will create the geometry for the Right Side View.
2. Pick **LINE**.

3. The prompt: FROM POINT. Type **8,1.5 (ENTER)**
4. The prompt: TO POINT. Use Polar coordinates and draw a line that is 3 units long at an angle of **0** degrees.
5. The prompt: TO POINT. Use Polar coordinates and draw a line that is 4.5 units long and has an angle of **90** degrees.
6. The prompt: TO POINT. Use Polar coordinates and draw a line that is .75 units long and has an angle of **180** degrees.
7. The prompt: TO POINT. Use Relative coordinates and draw a line that has an X value of **-1.5** units and a **Y** value of **-3.0** units.
8. The prompt: TO POINT. Use Polar coordinates and draw a line that is **.75** units long at an angle of **180** degrees.
9. The prompt: TO POINT. Pick **ENDPOINT** from the Object Snap options on the bottom toolbar. Position the crosshairs and the box at the left endpoint of the bottom horizontal line and pick the last point. **(ENTER)**
10. From the HOME tab, select **CIRCLE – CIRCLE, DIAMETER**.
11. The prompt: SPECIFY CENTER POINT FOR CIRCLE OR <3D/2P/TTR>: Type: **10,2.5 (ENTER)**
12. The prompt: SPECIFY RADIUS OF CIRCLE OR [DIAMETER]: DIAMETER: Type **.5 (ENTER)**
13. You will see that you have created the geometry that represents the Right Side View.
14. **QUICK SAVE** your drawing to your file.

DIMENSIONING

1. Press the function key F9 to turn Snap to Grid on or off when needed.
2. From the **ANNOTATE** tab, expand the **TEXT STYLE** menu
   (click the tiny arrow in the corner of the Text bar)
   Click NEW, and type DIMENSION for the name.
   Set font to **ROMANS.SHX**, set height to **.125**, click **APPLY** then **CLOSE**.





3. Also under the ANNOTATE tab, expand the DIMENSION STYLE menu (tiny arrow again) in the Dimensions bar.

4. Click NEW, type CHS or a FILE NAME then click CONTINUE.

5. Click on the PRIMARY UNITS tab, change the settings to the following:

    a. Units: Decimal

    b. Precision: 0.00

    c. Zero suppression: Leading Zeros

6. Pick the FIT tab – don't change anything, but notice how you can change the arrangement of the dimensions.

7. Pick the TEXT tab, make sure that the Text Alignment is Horizontal and change Text Style to Dimension.

8. Pick the **SYMBOLS AND ARROWS** tab, change the CENTER Marks for Circles to **LINES**.

9. Click **OK**, change the new Dimension Style to current by clicking on the **SET CURRENT** button, then **CLOSE**.

10. Change the layer to DIM.

11. From the ANNOTATE tab, pick the DIMENSION pull-down, and pick **LINEAR.**

12. The prompt: FIRST EXTENSION LINE ORIGIN OR RETURN TO SELECT: **(ENTER)**

13. The prompt: SELECT OBJECT TO DIMENSION: Pick the right vertical line in the Front View.

14. The prompt: DIMENSION LINE LOCATION [TEXT/ANGLE]: Type: **@.625<0 (ENTER)**

15. The prompt: DIMENSION TEXT <4.50>: If this is the correct value then move ahead.

16. DIMENSION → LINEAR

17. The prompt: FIRST EXTENSION LINE ORIGIN OR RETURN TO SELECT: **(ENTER)**

18. The prompt: SELECT OBJECT TO DIMENSIONS: Pick the top horizontal line on the front view.

19. The prompt: DIMENSION LINE LOCATION [TEXT/ANGLE]: Type: **@.625<90 (ENTER)**
20. The prompt: DIMENSION TEXT <3.75>: If this is the correct value then move ahead.
21. DIMENSION → LINEAR
22. The prompt: FIRST EXTENSION LINE ORIGIN OR RETURN TO SELECT: **(ENTER)**
23. The prompt: SELECT OBJECT TO DIMENSION: Pick the right vertical line in the Top View.
24. The prompt: DIMENSION LINE LOCATION [TEXT/ANGLE]: Type: **@.625<0 (ENTER)**
25. The prompt: DIMENSION TEXT <3.00>: If this is the correct value then move ahead.
26. DIMENSION → LINEAR
27. The prompt: FIRST EXTENSION LINE ORIGIN OR RETURN TO SELECT: **(ENTER)**
28. The prompt: SELECT OBJECT TO DIMENSION: Pick the top horizontal line in the Right Side View.
29. The prompt: DIMENSION LINE LOCATION: [TEXT/ANGLE]: Type: **@.625<90 (ENTER)**
30. The prompt: DIMENSION TEXT <.75>: If this is the correct value then move ahead.
31. DIMENSION → LINEAR
32. The prompt: FIRST EXTENSION LINE ORIGIN OR RETURN TO SELECT: **(ENTER)**
33. The prompt: SELECT OBJECT TO DIMENSION: Pick the small horizontal line that is just above the bottom horizontal line in the Right Side View.
34. The prompt: DIMENSION LINE LOCATION [TEXT/ANGLE]: Type: **@3.625<90 (ENTER)**
35. The prompt: DIMENSION TEXT <.75>: If this is the correct value then move ahead.
36. DIMENSIONS → LINEAR
37. The prompt: FIRST EXTENSION LINE ORIGIN. Pick the INTERSECTION option from the Object Snap button on the bottom toolbar (rt.click to access options). Pick the intersection of the ANGLED LINE and the horizontal line on the top of the Right Side View.

38. The prompt: SECOND EXTENSION LINE ORIGIN: With the INTERSECTION option still active, pick the intersection of the left vertical line and the horizontal line that is just above the bottom horizontal line (note, drag the mouse to the left to get the dimension to go that way).
39. The prompt: DIMENSION LINE LOCATION [TEXT/ANGLE]: Type: **@.625<180 (ENTER)**
40. Change the **LAYER** to **CL**.
41. DIMENSIONS → CENTER MARK. Select the CIRCLE on the Right Side View.
42. Use the following to change a preexisting dimension:
    a. FORMAT → DIMENSION STYLE
    b. Pick: **OVERRIDE**, then click the **SYMBOLS AND ARROWS** tab, change **CENTER MARKS** to **NONE**, click **OK** then **CLOSE**.
43. Change the **LAYER** to **DIM.**
44. DIMENISIONS → DIAMETER
45. The prompt: SELECT ARC OR CIRCLE: Pick the circle in the Right Side View anywhere on the top right quadrant.
46. The prompt: DIMENSIONS TEXT <.50>: DIMENSION LINE LOCATION: Place text as shown on page 29.
47. DIMENSION → LINEAR
48. The prompt: FIRST EXTENSION LINE ORIGIN OR RETURN TO SELECT. Pick the **ENDPOINT** option from the Object Snap button at the bottom of the screen. Pick the right endpoint of the horizontal center-line extension.
49. The prompt: SECOND EXTENSION LINE ORIGIN OR RETURN TO SELECT. Using the **INTERSECTION** option, pick the lower right corner of the Right Side View.
50. The prompt: DIMENSION LINE LOCATION [TEXT/ANGLE]: Type: **@.625<0 (ENTER)**
51. The prompt: DIMENSION TEXT <1.00>: If this is the correct value then move ahead.
52. DIMENSION → LINEAR

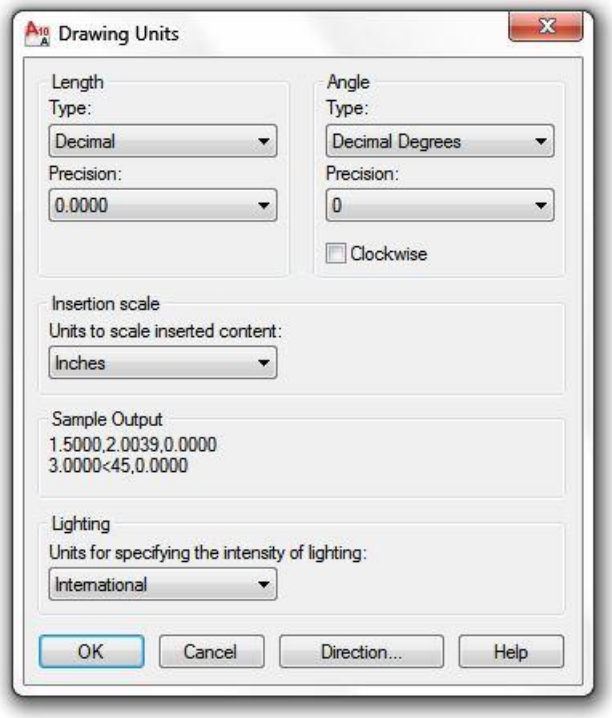
53. The prompt: FIRST EXTENSION LINE ORIGIN OR RETURN TO SELECT. If the **ENDPOINT** option for Object Snap is not selected, select it now. Pick the lower endpoint of the vertical center line extension.
54. The prompt: SECOND EXTENSION LINE ORIGIN OR RETURN TO SELECT. With the INTERSECTION options still selected for Object Snap, Pick the lower right corner of the Right Side View.
55. The prompt: DIMENSION LINE LOCATION [TEXT/ANGLE]: Type: **@.625<270 (ENTER)**
56. The prompt: DIMENSION TEXT <1.00>: If this is the correct value then move ahead.
57. Change the **LAYER** to **OBJECT**.
58. **CONGRATULATIONS!** You have completed the Wedge drawing. Now **SAVE** your drawing to your file.
59. **BACK UP** your drawing files to a disk **EACH DAY**.

SETTING UP A "B" (12X18) SHEET WITH BORDER

1. You will start each new drawing from the **FILE** menu. If prompted, select the template you want and click **OPEN**.

2. Go to **FILE** and select **SAVE AS** and enter the name for the drawing in the **FILE NAME** dialog box. Name the drawing (e.g. CHSBRUG1 or PVPHELAN1), use at least EIGHT CHARACTERS and NO SPACES. Use CHS or PV at the beginning of ALL your file names, followed by your last initials and a drawing number. Be sure to put your drawing in the correct **PERIOD FOLDER**.

3. Go to the **FORMAT** menu and select **UNITS**. This will bring up the DRAWING UNITS dialog box.



4. Set the **TYPE** to **DECIMAL** and set the number of digits to **0.000**.

5. For angles, select **DECIMAL DEGREES**.

6. Set angular **PRECISION** display to **0**.

7. Select the **DIRECTION** button at the bottom of the dialog box. Set the direction for angle **0** to be **EAST.** *This may already be the default value*.

8. Select the way that you want the angles to be measured, clockwise or counterclockwise. For this drawing, the setting should be **COUNTERCLOCKWISE**.

9. Make sure that the Insertion Scale is set to **INCHES**, and for now we will leave the Lighting set to **INTERNATIONAL**.

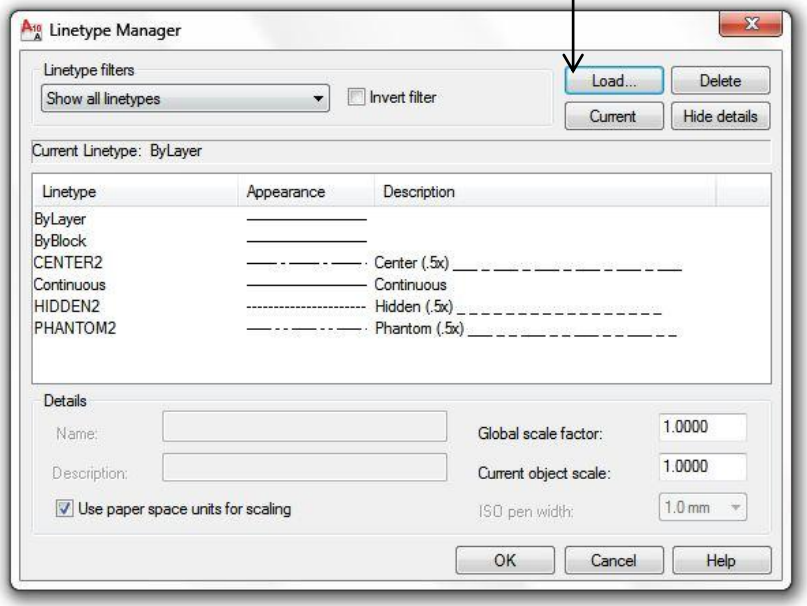
10. 9. Select **OK** to close the DIRECTION and DRAWING UNITS dialog boxes.

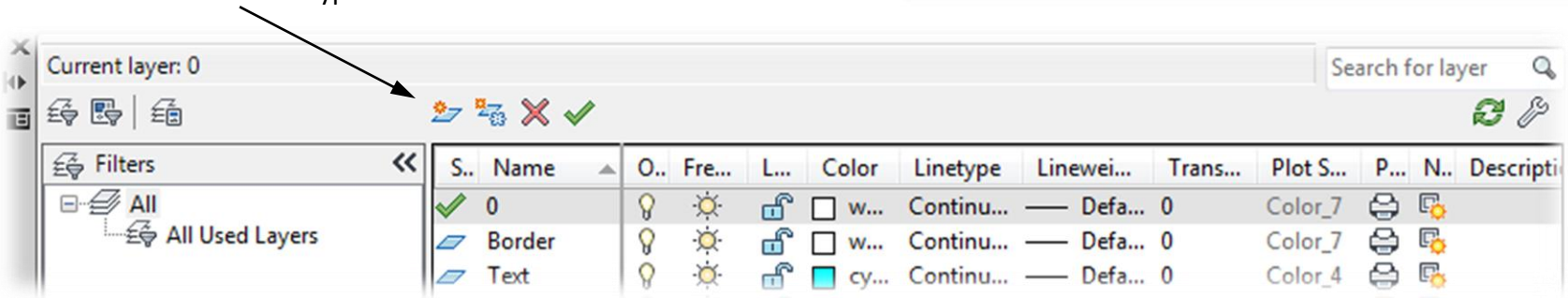
11. From the FORMAT menu, select DRAWING LIMITS. The limits will be different for each drawing depending on the paper size.

    a. For this drawing, set the lower left corner at **0,0** (default). **ENTER**

b. Set the upper right corner to **12,9** (default). **ENTER**

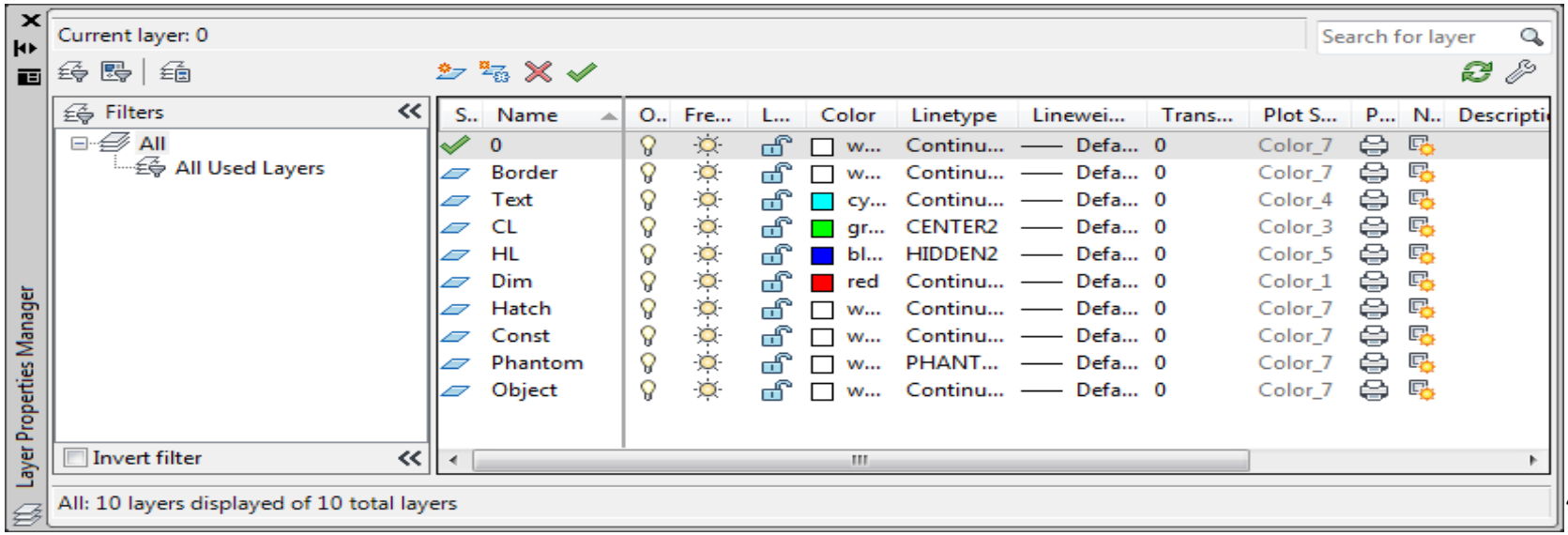
12. From the **VIEW** menu, **ZOOM ALL** to have the screen reflect the changes that were just made.
13. Right-click on the UCS icon in the lower left corner,  , and select **WORLD**.
14. Go to the **FORMAT** menu and select **LINETYPE**.
    b. Select LOAD
    c. Highlight CENTER2, HIDDEN2, and PHANTOM2 (hold the Ctrl [control] key to select them all at once) then select OK
    d. Select OK again if your lines were properly loaded
15. Go to the **TOOLS** menu and select **OPTIONS**.
    e. Go to the Open and Save tab.
    f. UNCHECK the box for Automatic Save and Create Backup.
16. Go to the **TOOLS** menu and select **DRAFTING SETTINGS.**
17. Set GRID and SNAP to appropriate increments
18. In this case: X SPACING = .25 and Y SPACING = .25.
19. DO NOT turn on SNAP, just pick OK (snap and
20. Grid can be turned on at the bottom of the CAD screen).
21. Set MAJOR LINE = 4.
22. Under the **FORMAT** tab, click **Layer…**
23. Click **NEW LAYER** and type **BORDER** in the **NAME BOX.**





24. Continue this process until you have created a **NEW LAYER** for each item listed below. Select each layer individually and set the correct color by selecting the **COLOR** menu (the colored squares). Also set the correct linetype by selecting the **LINETYPE** menu. Set each layer according to the list below.

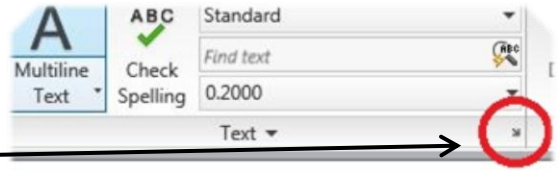
25. **LAYER NAME**	26. **COLOR**	27. **LINETYPE**
1. 0	White	Continuous
2. Border	White	Continuous
3. Text	Cyan	Continuous
4. CL	Green	CENTER2
5. HL	Blue	Hidden2
6. Dim	Red	Continuous
7. Hatch	Any color	Continuous
8. Const	White	Continuous
9. Phantom	White	Phantom2
10. Object	White	Continuous
11. Viewport	Magenta	Continuous

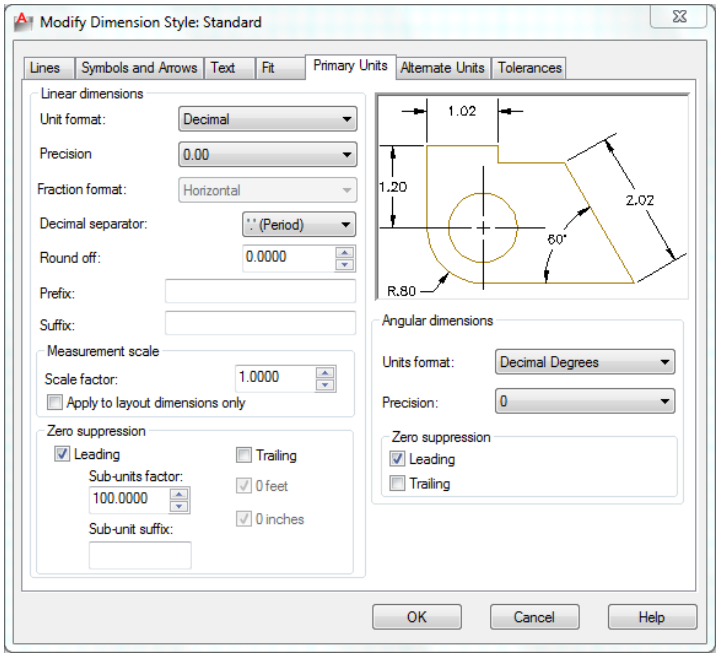


28. Highlight the **BORDER** layer, then pick the **CURRENT** button (green checkmark). You will see a checkmark appear next to **BORDER**.
29. Click the **X** in the corner to close the window
30. Select **SAVE** from the **FILE** menu to save all the parameters you have created. Make sure to save regularly.

SET UP DIMENSION STYLE

1. From the **ANNOTATE** tab, expand the **TEXT STYLE** menu (click the tiny arrow in the corner of the Text bar)

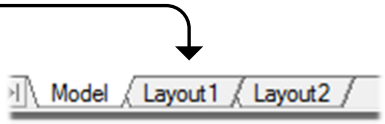




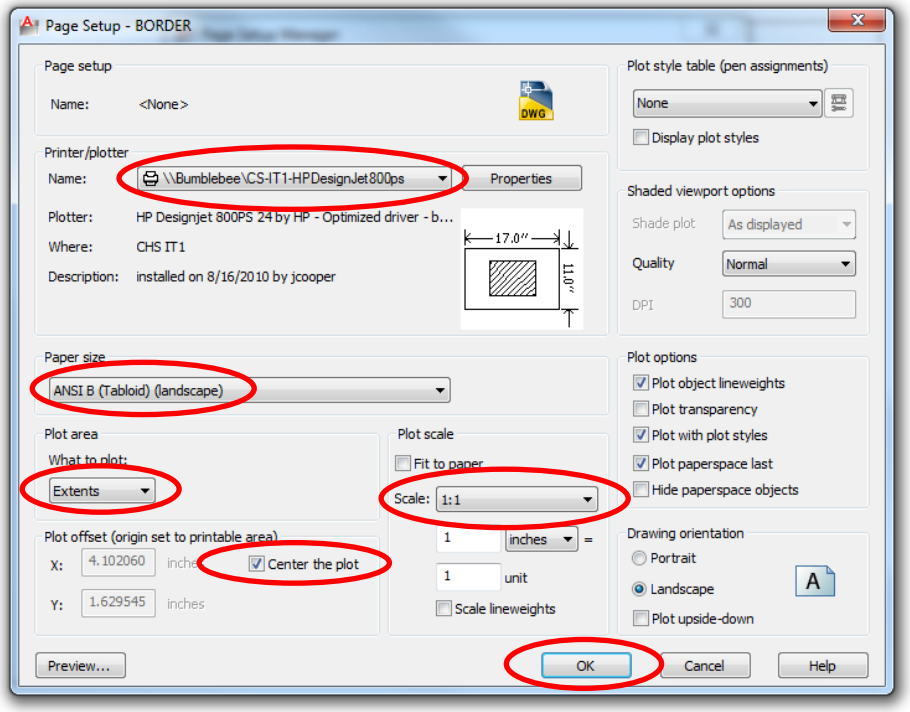
2. Click NEW, and type DIMENSION for the name.
3. Set font to **ROMANS.SHX**, set height to **0.000**, click **APPLY** then **CLOSE**.
4. Also under the ANNOTATE tab, expand the DIMENSION STYLE menu (tiny arrow again) in the Dimensions bar.
5. Click NEW, type PROPER SCALE 1.0 (or .25, etc.) then click CONTINUE.
6. Click on the PRIMARY UNITS tab, change the settings to the following:
    a. Units: Decimal
    b. Precision: 0.00
    c. Zero suppression: Leading Zeros
7. Pick the FIT tab – don't change anything, but notice how you can change the arrangement of the dimensions.
8. Pick the TEXT tab, make sure that the Text Alignment is Horizontal and change Text Style to Dimension.
9. Pick the **SYMBOLS AND ARROWS** tab, change the CENTER Marks for Circles to **LINES**.
10. Click **OK**, change the new Dimension Style to current by clicking on the **SET CURRENT** button, then **CLOSE**.

SETTING UP PAPERSPACE

1. Right-click on the **Layout1** tab at the *bottom* of the screen, and rename to BORDER.



2. Set up the PAPER SPACE page set-up by RIGHT-clicking on the Layout1 tab and go to the Page Setup Manager. Properly set up the paper for the appropriate plotter, on ANSI B paper, at a scale of 1:1, with the plot area set to extents and plot offset checked to center the plot.
3. Make sure all layers have been created, and set BORDER to current.
4. Once you have set up all PARAMETERS you will see a representation of the DRAWING LIMITS on the screen. Now follow the steps on the following page to produce a border for your drawing and title block.



BORDER

1) Create Border on PAPER SPACE for ANSI B setup.
2) Go to DRAW then click POLYLINE
a) At the prompt – From Point:..... click in the lower left corner, above the dashed line.
b) At the prompt: ..... W" for width [enter]
c) At the prompt: Starting Width <0.0000>..... .05 [enter]
d) At the prompt: <0.0500>..... [enter]
e) At the prompt: ..... @9.5<90 [enter]
f) At the prompt: ..... @14<0 [enter]
g) At the prompt: ..... @9.5<270 [enter]
h) At the prompt: ..... "C" for close [enter]

2) MOVE the new border to be centered on the page.
3) Quick Save

BORDER POLYLINE .050

POLYLINE .025

TITLE BLOCK

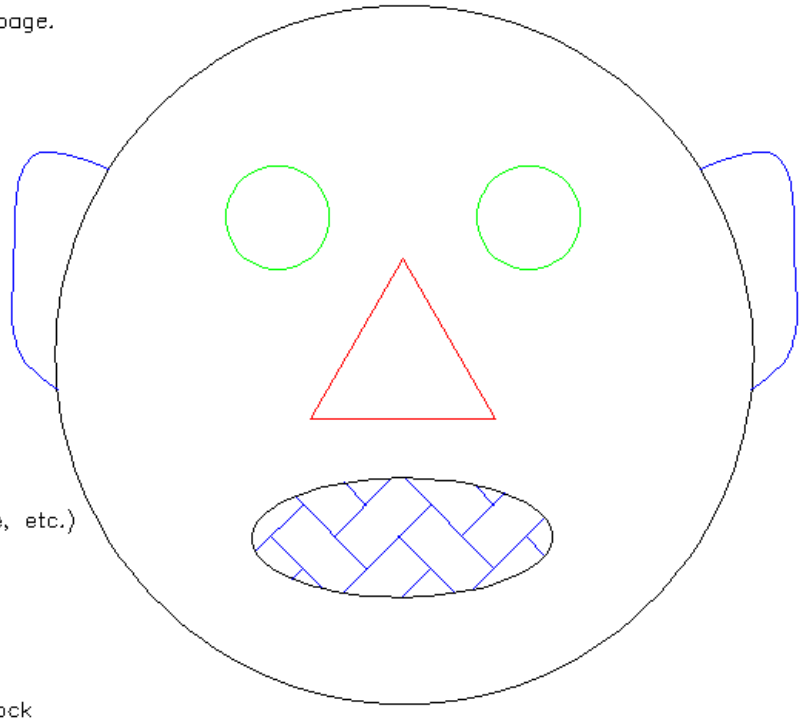
Create according to specifications

TEXT = romans.shx

1) Large = .25 height
2) Small = .125 height

LOGO

2) Desgin Logo on paper
3) Create "L" layers (i.e. L–Head, L–Nose, L–eye, etc.)
4) Use 3 Colors
   Use Black
   Use Hatch
5) Create Logo on PAPER SPACE
6) Modify Copy – for corner of titleblock
7) Modify Scale – reduce size of copy
8) Modify Move – place copy in corner of titleblock
9) Modify Rotate – rotate copy to line up with title block



9.5

14

1.5

1.5

3.5

3.0

SEAT: 22

SCALE: 1–1

PART NAME

DR.BY: NAME HERE

.75 .75

CHICO HIGH SCHOOL

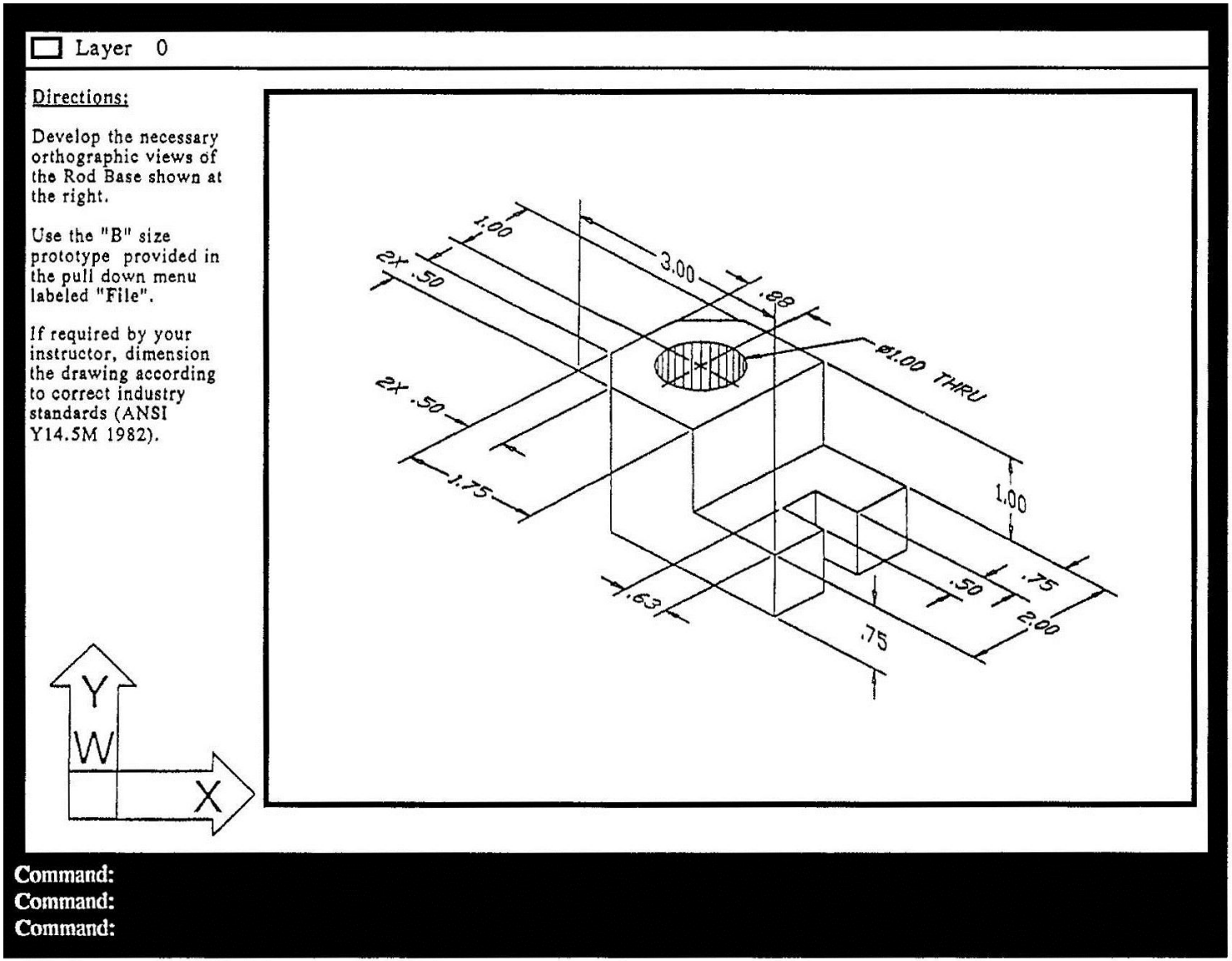
PRINTING / PLOTTING

1. Turn on the power supply to all printing/plotting devices and switching devices.
2. Set any parameters on the printer/plotter to the necessary settings.
3. Save all work to correct file and back up to disk.
4. Load your paper.
5. Once all peripheral devices have been set, do a ZOOM ALL on your work to make sure everything is within the screen.
6. Go to FILE then PLOT.
7. Set pen assignments to suit your layers and colors.
8. Set EXTENTS.
9. Set your PAPER SIZE to the size sheet you are using width first, then height.
10. Check your ORIGIN as 0,0.
11. Set your plot units and drawing units correctly.
12. Do a FULL PREVIEW, end if everything is OK.
13. Hit ENTER to continue and answer the questions on the command line to execute your file.

DRAWING NUMBERS 3, 4, & 5

1. DRAWING NUMBER 3
    a. Complete three view of the ROD BASE on page 47. Draw the views on your newly created border file. Start anywhere you like in MODEL SPACE. Be sure each view is in the correct position and properly aligned with the views adjacent to it.
    b. Place all DIMENSIONS from the problem onto your drawing. Make all decimals correct to two places.
    c. Create a VIEWPORT in PAPERSPACE for your model and scale it to 1XP.
2. DRAWING NUMBER 4
    a. Complete three view of the LEVER on page 48. Draw the views on your newly created border file. Start anywhere you like in MODEL SPACE. Be sure each view is in the correct position and properly aligned with the views adjacent to it.
    b. Place all DIMENSIONS from the problem onto your drawing. Make all decimals correct to two places.
    c. Create a VIEWPORT in PAPERSPACE for your model and scale it to 1XP.
3. DRAWING NUMBER 5
    a. Complete three view of the FIXTURE BASE on page 49. Draw the views on your newly created border file. Start anywhere you like in MODEL SPACE. Be sure each view is in the correct position and properly aligned with the views adjacent to it.
    b. Place all DIMENSIONS from the problem onto your drawing. Make all decimals correct to two places.
    c. Create a VIEWPORT in PAPERSPACE for your model and scale it to 1XP.

DRAWING NUMBER 3



DRAWING 3

DRAWING NUMBER 4

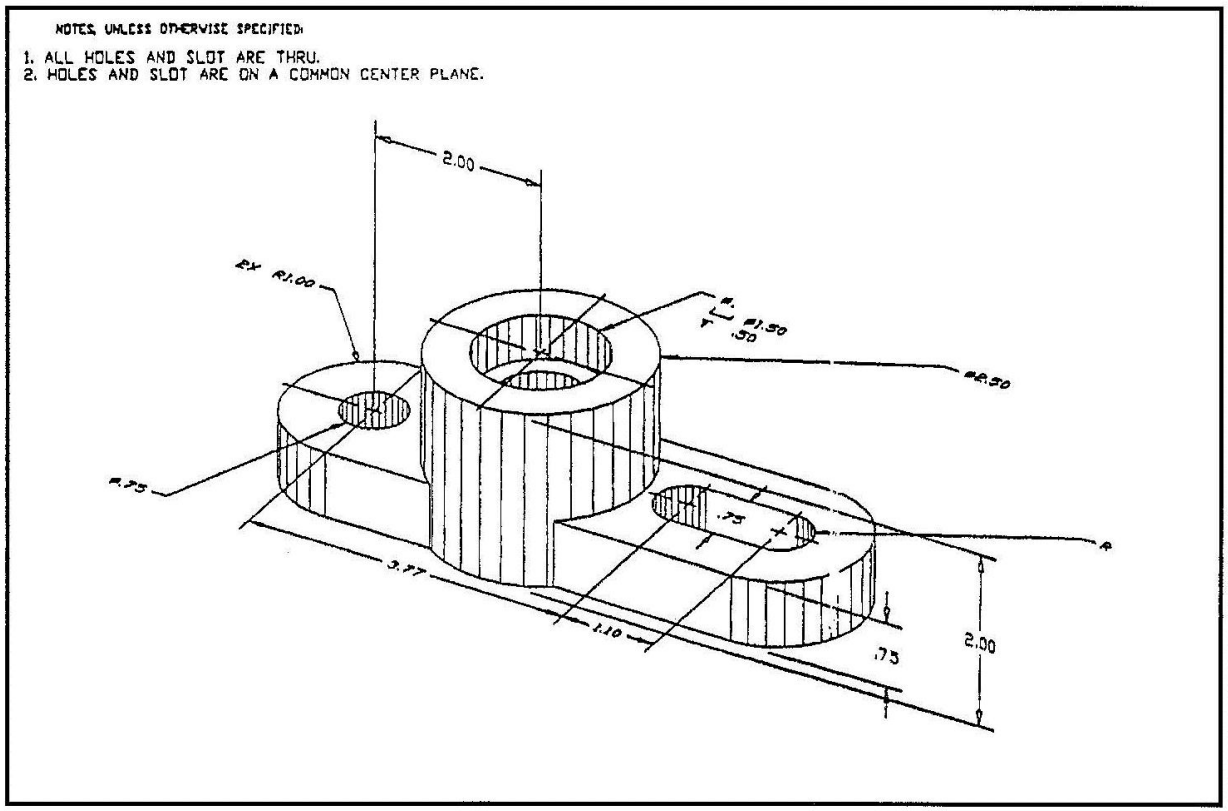
Layer 0

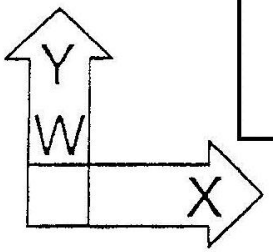
Directions:

Develop the necessary orthographic views of the Lever shown at the right.

Use the "B" size prototype provided in the pull down menu labeled "File".

If required by your instructor, dimension each view according to correct industry standards (ANSI Y14.5M 1982).





Command:
Command:
Command:

DRAWING 4

DRAWING NUMBER 5

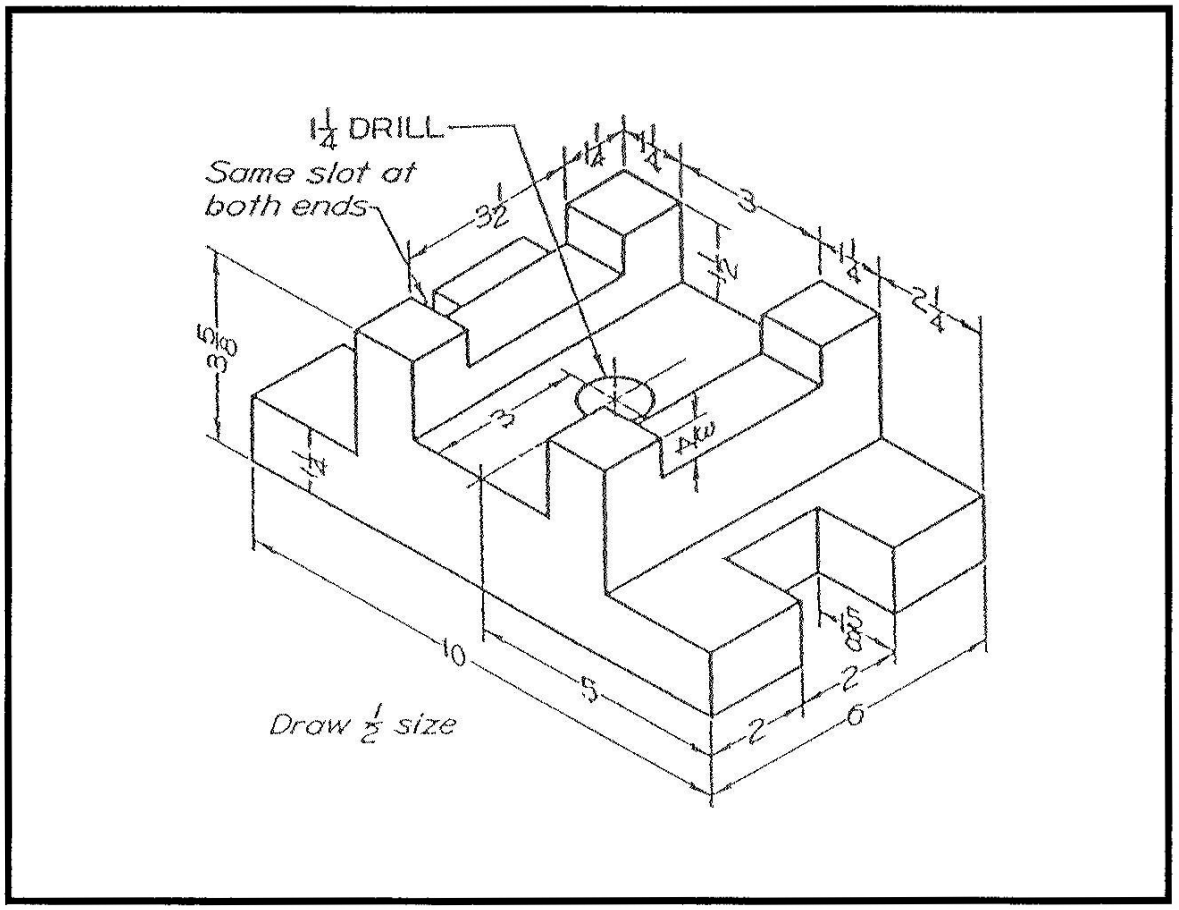
Layer 0

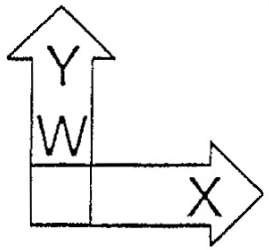
Directions:

Develop the necessary orthographic views of the Rod Base shown at the right.

Use the "B" size prototype provided in the pull down menu labeled "File".

If required by your instructor, dimension the drawing according to correct industry standards (ANSI Y14.5M 1982).





Command:
Command:
Command:

DRAWING 5