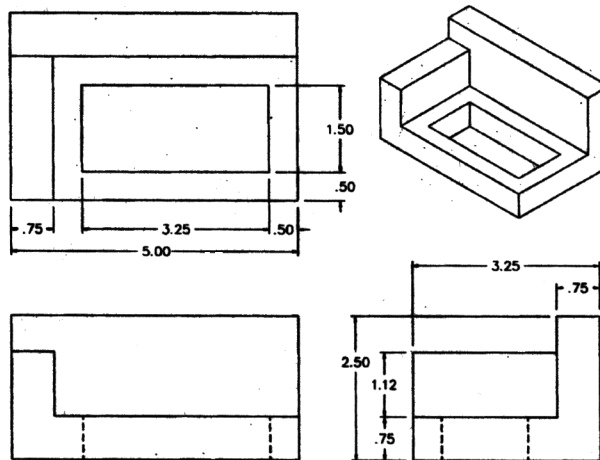


## Tutorial Exercise #1 Plate.Dwg



**Objectives:** practice on basic commands and basic setup for isometric drawing.

### System Settings:

- Start a new drawing with name "Plate."
- Use the Units command to change the number of decimal places past the zero from 4 to 2. Keep the remaining default unit values.
- Using the Limits command, keep 0,0 for the lower left corner and change the upper right corner from 12,9 to 10.50,8.00.
- Using the Grid command and change the grid spacing from 1.00 to 0.25 units.
- Keep the snap and ortho off.

**Step #1: using the Line command to draw the figure at the right.**

**Command: Line**

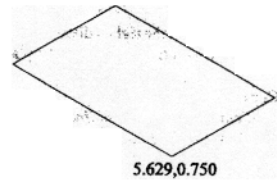
**From point: 5.629,0.750**

**To point: @3.25<30**

**To point: @5.00<150**

**To point: @3.25<210**

**To point: C**



**Step #2: copy the four lines drawn in the previous step up at a distance of 2.50 units in the 90 degree direction.**

**Command: Copy**

**Select objects: (select lines "A," "B," "C," and "D")**

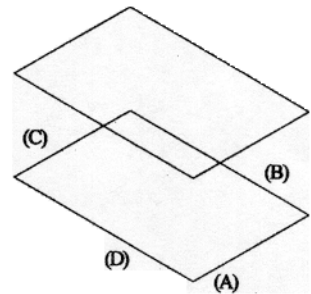
**Select objects: (strikes Enter to continue)**

**<Base point or displacement>**

**/Multiple: Endp**

**of (select the line at "A")**

**Second point of displacement: @2.5<90**



**Step #3: connect the top and bottom isometric boxes with line segments. Draw one segment using the Line command. Using the Copy-Multiple command to duplicate and form the remaining segments. Erase the two dashed lines since they are not visible in an isometric drawing.**

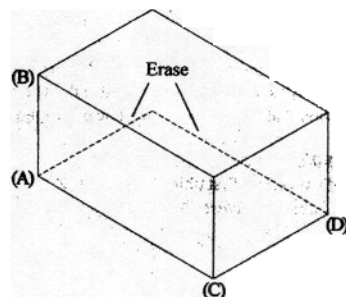
**Command: Line**

**From point: Endp**

**Of (select the endpoint of the line at "A")**

**To point: Endp**

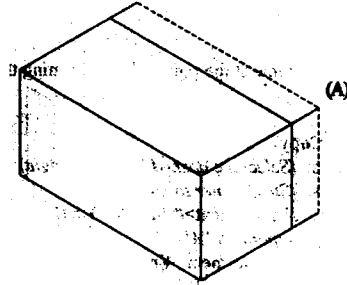
**Of (select the endpoint of**



the line at "B")  
To point: (strike Enter to exit this command)  
Copy this line from "A" to "C" and "D."

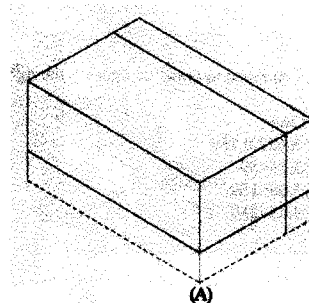
Step #4: copy the two dashed lines at the right a distance of 0.75 in the 210-degree direction.

Command: Copy  
Select objects: (select the two dashed lines at the right)  
Select objects: (strike Enter to continue)  
<Basic points or displacement>  
/Multiple: Endp  
of (select the endpoint at "A")  
Second point of displacement: @0.75<210



Step # 5: Copy the two dashed lines at the right a distance of 0.75 in the 90-degree direction. This forms the base of the plate.

Command: Copy  
Select objects: (select the two dashed lines at the right)  
Select objects: (Strike Enter to continue)  
<Base point or displacement>  
/Multiple: Endp  
of (Select the endpoint of "A")  
Second point of displacement: @0.75<90



Step # 6: Copy the dashed line at the right a distance of 0.75 in the -30 degree direction.

Command: **Copy**

Select objects: *(select the two dashed lines at the right)*

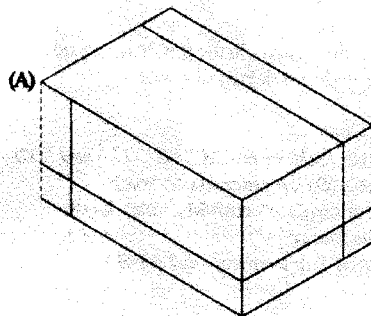
Select objects: *(Strike Enter to continue)*

<Base point or displacement>

/Multiple: **Endp**

of *(Select the endpoint of "A")*

Second point of displacement: @0.75<-30

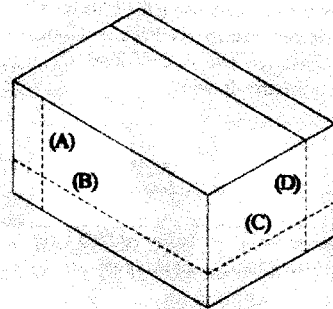


Step # 7: Use Fillet command to place a corner between the two dashed lines at "A" and "B" and at "C" and "D". the current fillet radius should already be set to a value of 0.

Command: **Fillet**

Polyline/Radius<Select first object>: *(Select "A")*

Select second object:  
*(Select "B")*



Command: **Fillet**

Polyline/Radius<Select first object>: *(Select "C")*

Select second object: *(Select "D")*

Step # 8: Copy the dashed line at the right forming the top of the base.

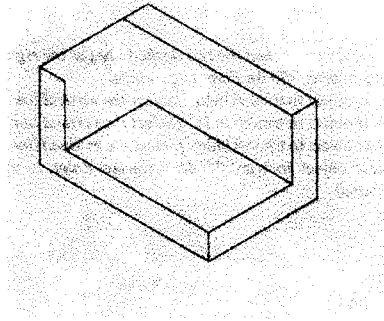
Command: **Copy**

Select objects: *(select the ~~two~~ dashed lines at the right)*

Select objects: *(Strike Enter to continue)*

<Select object to trim>/Undo: *(Strike Enter to exit this command)*

Step # 11: Your display should be similar to the illustration at the bottom.



Step # 12: Copy the dashed line at the right a distance of 1.12 units in the 90-degree direction.

Command: **Copy**

Select objects: *(select the ~~two~~ dashed lines at the right)*

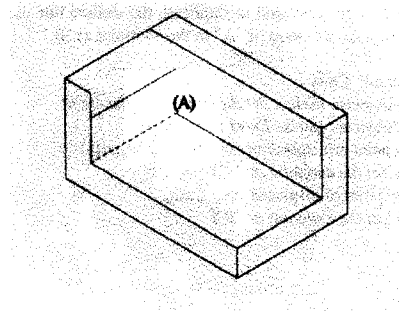
Select objects: *(Strike Enter to continue)*

<Base point or displacement>

/Multiple: **Endp**

*of (Select the endpoint of "A")*

Second point of displacement: **@1.12<90**



Step # 13: Copy the dashed line at "A" to new position at "B" and "C". Then delete the line at "A" using the Erase command.

Command: **Copy**

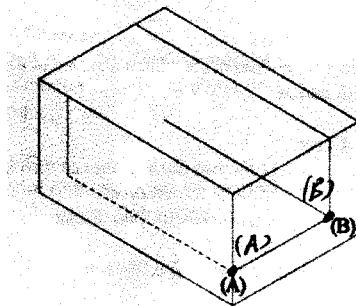
Select objects: *(select the ~~two~~ dashed lines at the right)*

Select objects: *(Strike Enter to continue)*

<Base point or displacement>/Multiple: **M**

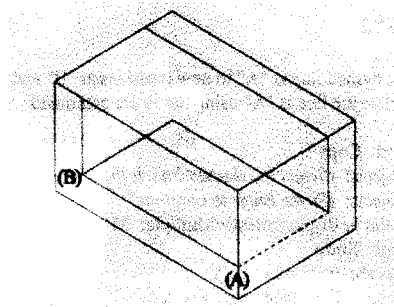
Basepoint: **Endp**

<Base point or displacement>  
 /Multiple: **Endp**  
 of (*Select the endpoint of "A"*)  
 Second point of displacement: **Endp**  
 of (*Select the endpoint of "B"*)



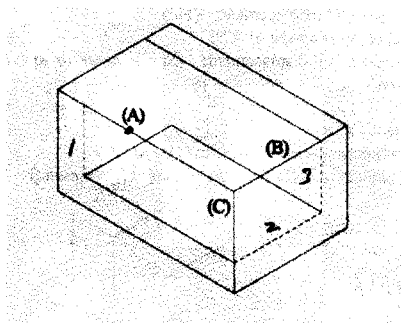
Step # 9: Copy the dashed line at the right. This forms the base of the plate.

Command: **Copy**  
 Select objects: (*select the ~~two~~ dashed lines at the right*)  
 Select objects: (*Strike Enter to continue*)  
 <Base point or displacement>  
 /Multiple: **Endp**  
 of (*Select the endpoint of "A"*)  
 Second point of displacement: **Endp**  
 of (*Select the endpoint of "B"*)

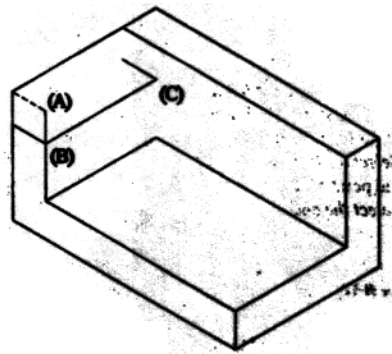


Step # 10: Use Trim command to clean up the excess lines at the right.

Command: **Trim**  
 Select cutting edge(s)...  
 Select objects: (*select the three dashed lines at the right*)  
 Select objects: (*Strike Enter to continue*)  
 <Select object to trim>/Undo: (*select inclined line at "A"*)  
 <Select object to trim>/Undo: (*select inclined line at "B"*)  
 <Select object to trim>/Undo: (*select inclined line at "C"*)



of (Select the endpoint of "A")  
 Second point of displacement: **Endp**  
 of (Select the endpoint of "B")  
 Second point of displacement: **Endp**  
 of (Select the endpoint of "C")  
 Second point of displacement:  
 (Strike Enter to exit this command)



**Command: Erase**

Select objects: (Select the dashed line at "A")  
 Select objects: (Strike Enter to exit this command)

Step # 14: Use Trim command to clean up the excess lines at the right.

**Command: Trim**

Select cutting edge(s)...

Select objects: (select the two dashed lines at the right)

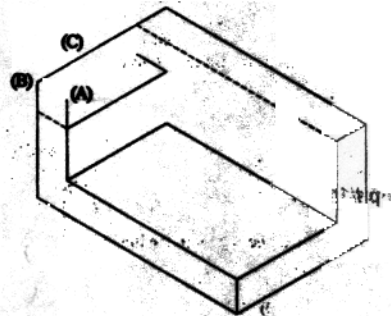
Select objects: (Strike Enter to continue)

<Select object to trim>/Undo: (select inclined line at "A")

<Select object to trim>/Undo: (select inclined line at "B")

<Select object to trim>/Undo: (select inclined line at "C")

<Select object to trim>/Undo: (Strike Enter to exit this command)



Step # 15: Use the Copy command to duplicate the dashed line the right from the endpoint of "A" to the endpoint at "B".

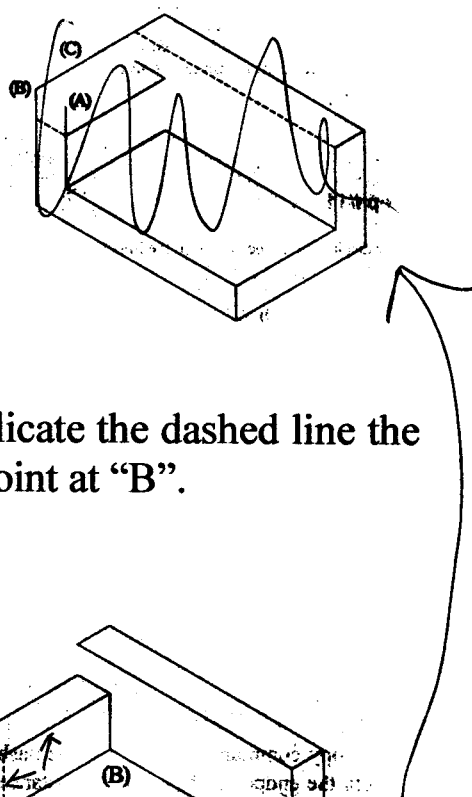
**Command: Copy**

Select objects: (select the ~~two~~ dashed lines at the right)

Select objects: (Strike Enter

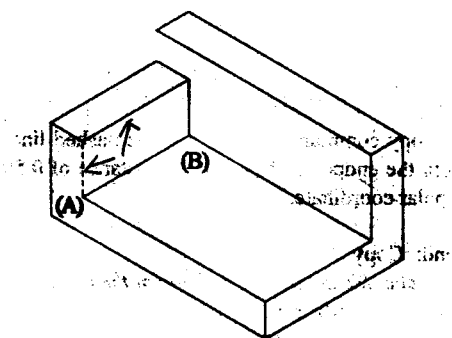
7

*to continue)*  
 <Base point or displacement>  
 /Multiple: **Endp**  
 of (*Select the endpoint of "A"*)  
 Second point of displacement: **Endp**  
 of (*Select the endpoint of "B"*)



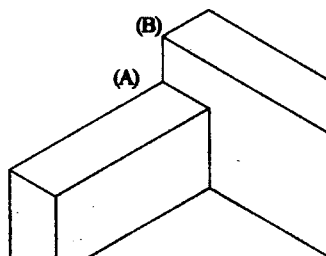
Step # 16: Use the Copy command to duplicate the dashed line the right from the endpoint of "A" to the endpoint at "B".

Command: **Copy**  
 Select objects: (*select the two dashed lines at the right*)  
 Select objects: (*Strike Enter to continue*)  
 <Base point or displacement>  
 /Multiple: **Endp**  
 of (*Select the endpoint of "A"*)  
 Second point of displacement: **Endp**  
 of (*Select the endpoint of "B"*)



Step # 17: Use the Line command to connect the endpoints of the segments at "A" and "B" illustrated at the right.

Command: **Line**  
 From point: **Endp**  
 of (*Select the endpoint of "A"*)  
 To point: **Endp**  
 of (*Select the endpoint of "B"*)  
 To point: (*Strike Enter to exit this command*)



Step # 18: Use the Copy command to duplicate the dashed line the right from the endpoint of "A" to the distance of 0.5 units specified



by a polar coordinate. This value begins the outline of the rectangular hole through the object.

**Command: Copy**

Select objects: (select the ~~two~~ dashed lines at the right)

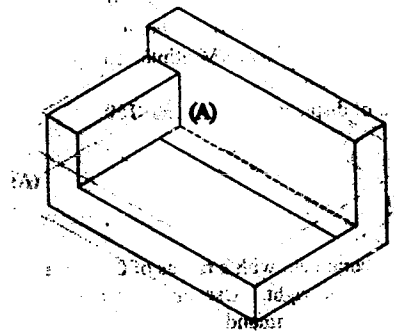
Select objects: (Strike Enter to continue)

<Base point or displacement>

/Multiple: **Endp**

of (Select the endpoint of "A")

Second point of displacement: @0.5<210



Step # 19: Use the Copy command to duplicate the dashed line the right from the endpoint of "A" to the distance of 0.5 units using a polar coordinate.

**Command: Copy**

Select objects: (select the ~~two~~ dashed lines at the right)

Select objects: (Strike Enter to continue)

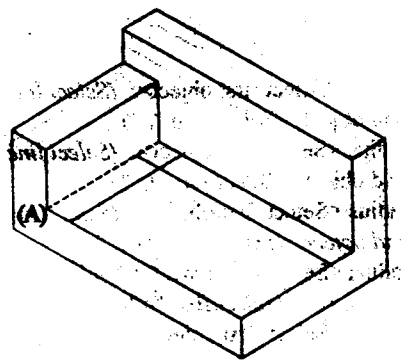
<Base point or displacement>

/Multiple: **Endp**

of (Select the endpoint of "A")

Second point of displacement:

@0.5<-30



Step # 20: Use the Copy command to duplicate the dashed line the right from the endpoint of "A" to the distance of 0.5 units specified by a polar coordinate.

**Command: Copy**

Select objects: (select the ~~two~~ dashed lines at the right)

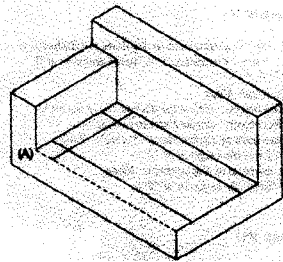
Select objects: (Strike Enter to continue)

<Base point or displacement>

/Multiple: **Endp**

of (*Select the endpoint of "A"*)

Second point of displacement: **@0.5<30**



Step # 21: Use the Copy command to duplicate the dashed line the right from the endpoint of "A" to the distance of 0.5 units using a polar coordinate.

Command: **Copy**

Select objects: (*select the dashed line at the right*)

Select objects: (*Strike Enter to continue*)

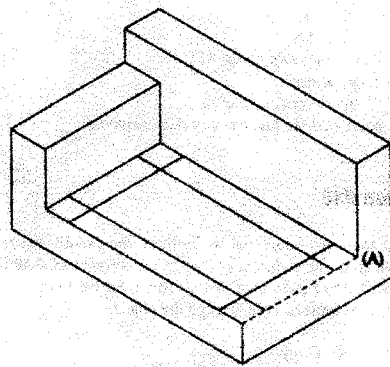
<Base point or displacement>

/Multiple: **Endp**

of (*Select the endpoint of "A"*)

Second point of displacement:

**@0.5<150**



Step # 22: Use Fillet command with a radius of 0 to corner the four dashed lines at the right. Use the Multiple command to remain in the Fillet command. To exit the fillet command prompts, use the CTRL-C sequence to cancel the command when finished.

Command: **Fillet**

Polyline/Radius<Select

first object>: (*Select "A"*)

Select second object:

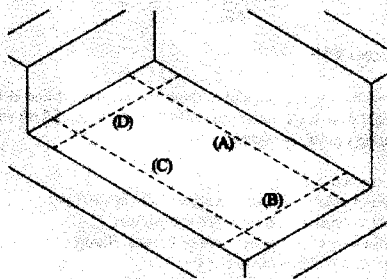
(*Select "B"*)

Polyline/Radius<Select

first object>: (*Select "B"*)

Select second object:

(*Select "C"*)



Polyline/Radius<Select first object>: (*Select "C"*)

Select second object: (*Select "D"*)

Polyline/Radius<Select first object>: (*Select "D"*)

Select second object: (*Select "A"*)

Polyline/Radius<Select first object>: **CTRL-C** (*to cancel*)

Step # 23: Use the Copy command to duplicate the dashed line the right. This will begin forming the thickness of the base inside the rectangular hole.

Command: **Copy**

Select objects: (*select the dashed line at the right*)

Select objects: (*Strike Enter to continue*)

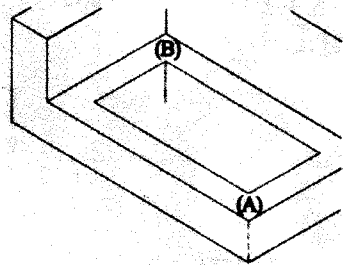
<Base point or displacement>

/Multiple: **Endp**

of (*Select the endpoint of "A"*)

Second point of displacement: **Endp**

of (*Select the endpoint of "B"*)



Step # 24: Use the Copy command to duplicate the dashed line the right. These lines form the inside surfaces to the rectangular hole.

Command: **Copy**

Select objects: (*select the dashed lines at the right*)

Select objects: (*Strike Enter to continue*)

<Base point or displacement>

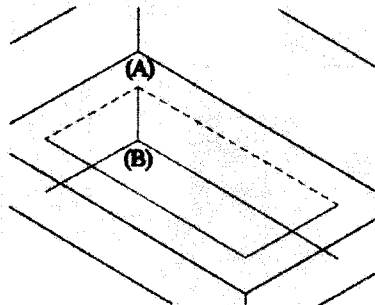
/Multiple: **Endp**

of (*Select the endpoint of "A"*)

Second point of displacement:

**Endp**

of (*Select the endpoint of "B"*)



Step # 25: Use Trim command to clean up the excess lines at the right.

Command: **Trim**

Select cutting edge(s)...

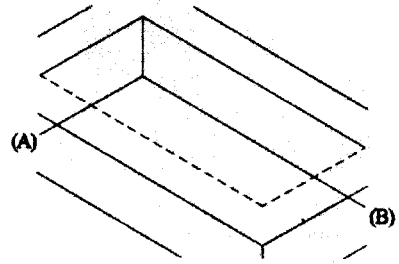
Select objects: *(select the two dashed lines at the right)*

Select objects: *(Strike Enter to continue)*

<Select object to trim>/Undo: *(select inclined line at "A")*

<Select object to trim>/Undo: *(select inclined line at "B")*

<Select object to trim>/Undo: *(Strike Enter to exit this command)*



Step # 26: The complete isometric is illustrated at right. This drawing may be dimensioned using Dim-Oblique command. Consult your instructor if next step is necessary.

