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**Chapter 13**  
**3D Edits**

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**Rotate 3D 13.1**

Rotates objects about a three-dimensional axis.

1. **Choose** Modify, 3D Operation, Rotate3D.  
or
2. **Type** ROTATE3D at the command prompt.

Command: **rotate3D**

Current positive angle: ANGDIR=counterclockwise  
ANGBASE=0

Select objects: **pick**

Select objects: **enter**

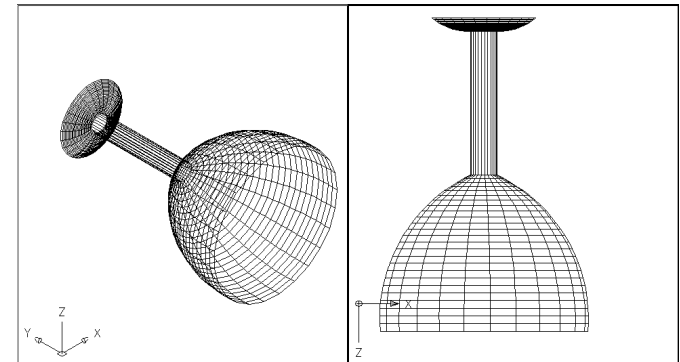
Specify first point on axis or define axis by

[Object/Last/View/Xaxis/Yaxis/Zaxis/2points]: **x**

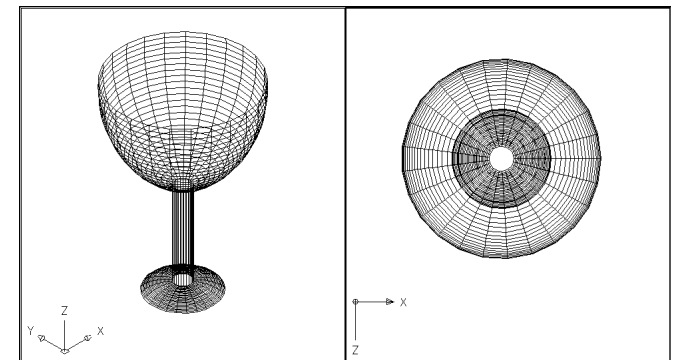
Specify a point on the X axis <0,0,0>: **pick**

Specify rotation angle or [Reference]: **90**

*Object Before Rotation*



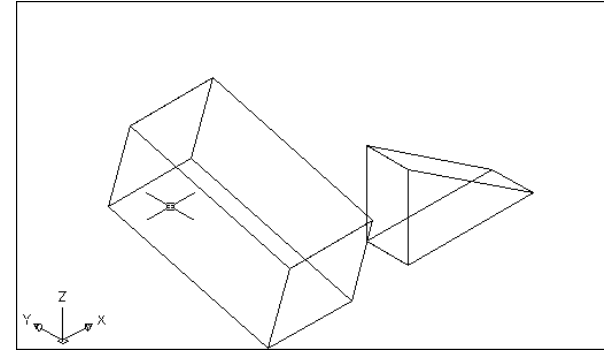
*Object Rotated 90 degrees around x-axis*



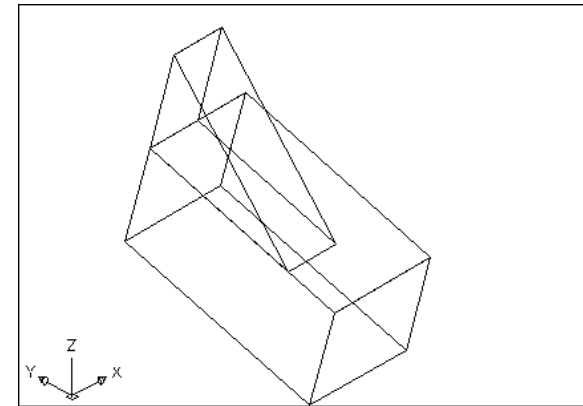
## Align 13.2

1. **Choose** Modify, 3D Operation, Align.  
or
2. **Type** ALIGN at the command prompt.  
Command: **align**  
Select objects: **pick the wedge**  
Select objects: **enter**  
Specify first source point: **P1**  
Specify first destination point: **P2**  
Specify second source point: **P3**  
Specify second destination point: **P4**  
Specify third source point or <continue>: **enter**  
Scale objects based on alignment points? [Yes/No] <N>:  
**enter**

Objects before align



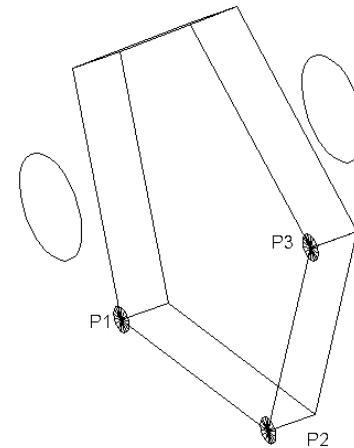
Wedge Aligned to the Box ( Not Scaled)



### Mirror 3D 13.3

1. **Choose** Modify, 3D Operation, Mirror 3D.  
or
2. **Type** MIRROR3D at the command prompt.  
Command: **mirror3D**  
Select objects: **pick the circle**  
Select objects: **enter**  
Specify first point of mirror plane (3 points) or  
[Object/Last/Zaxis/View/XY/YZ/ZX/3points] <3points>:  
**P1**  
Specify second point on mirror plane: **P2**  
Specify third point on mirror plane: **P3**  
Delete source objects? [Yes/No] <N>: **enter**

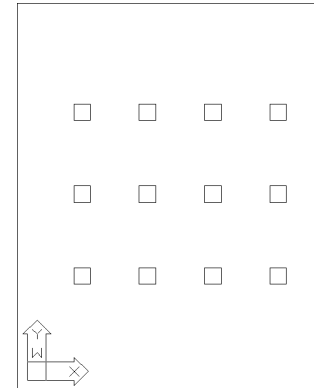
*Circle Mirrored around 3 Points*



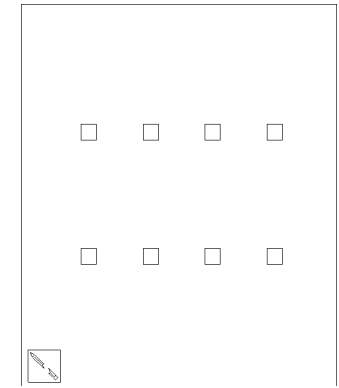
### 3D Array (Rectangular) 13.4

- Choose** Modify, 3D Operation, 3D Array.  
or
- Type** 3DARRAY at the command prompt.  
Command: **3darray**  
Select objects: **pick the cube**  
Select objects: **enter**  
Enter the type of array [Rectangular/Polar] <R>: **enter**  
Enter the number of rows (---) <1>: **3**  
Enter the number of columns (|||) <1>: **4**  
Enter the number of levels (...) <1>: **2**  
Specify the distance between rows (---): **5**  
Specify the distance between columns (|||): **4**  
Specify the distance between levels (...): **8**

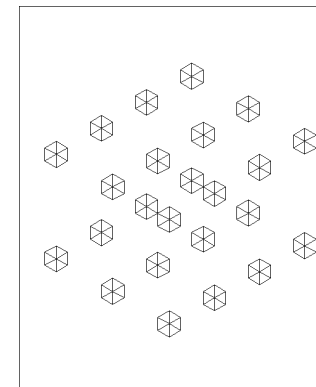
Arrayed Objects in Plan View



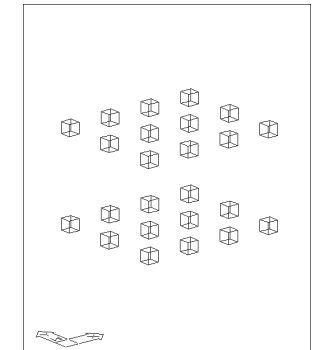
Arrayed Objects in Front View



Arrayed Objects in 3D Isometric



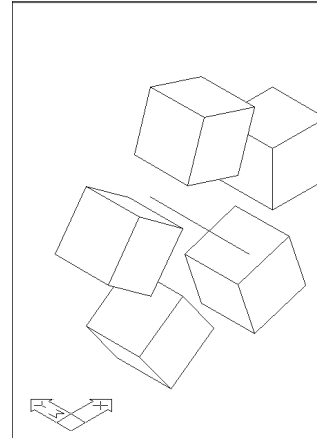
Arrayed Objects in 3D Viewpoint



### 3D Array (Polar) 13.5

1. **Choose** Modify, 3D Operation, 3D Array.  
or
2. **Type** 3DARRAY at the command prompt.  
Command: **3darray**  
Select objects: **pick cube**  
Select objects: **enter**  
Enter the type of array [Rectangular/Polar] <R>: **p**  
Enter the number of items in the array: **5**  
Specify the angle to fill (+=ccw, -=cw) <360>: **enter**  
Rotate arrayed objects? [Yes/No] <Y>: **enter**  
Specify center point of array: **mid of axis line**  
Specify second point on axis of rotation: **pick**

Arrayed Objects Around a Line



Arrayed Objects in Plan View

