





All of the members of the CUBE FAMILY use the same Edit box. So, rather than go through each category (which would probably bore you to tears, I will demonstrate the changes without going step by step.

You could make some of these shapes through changing the cube. However, the changes possible differ.

If you need to refresh your memory on something, simply page back to the information on the CUBE.

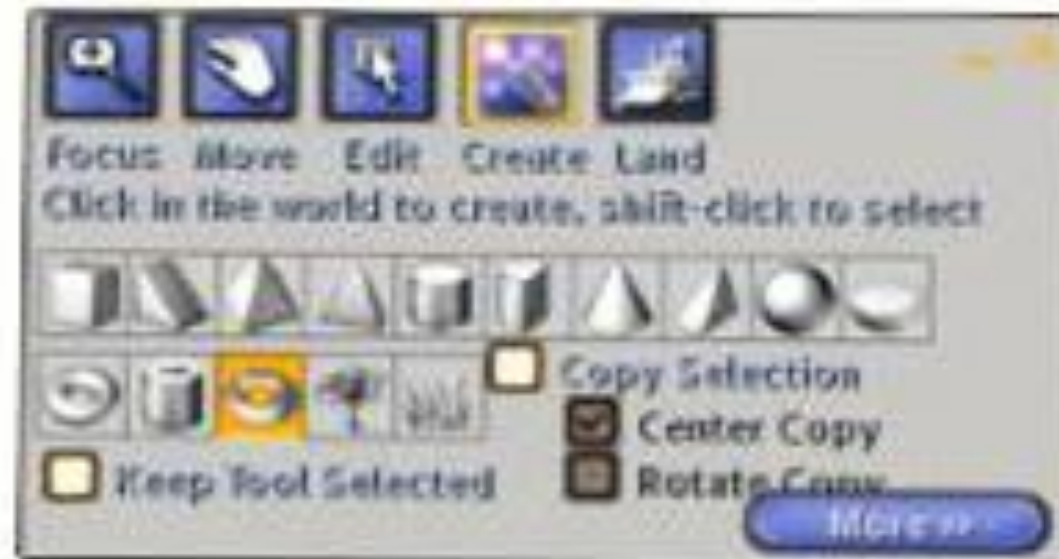
THE RIGHT TRIANGLE





So, how do you CREATE A PRIM?

1. Right click on the ground with the mouse.
A pie diagram will come up with CREATE in the right upper quadrant of the "pie."
2. Left click on "Create."
3. A menu with the types of prims will come up. The prims you saw on the last page.



If you do not choose a different prim, you will automatically create a CUBE. The cube is called a DEFAULT, something that appears if you don't make a new choice.

4. Your mouse pointer is now a "MAGIC WAND."
5. Left click on the ground with your "magic wand."
Your new prim will appear on the ground in the area where clicked.





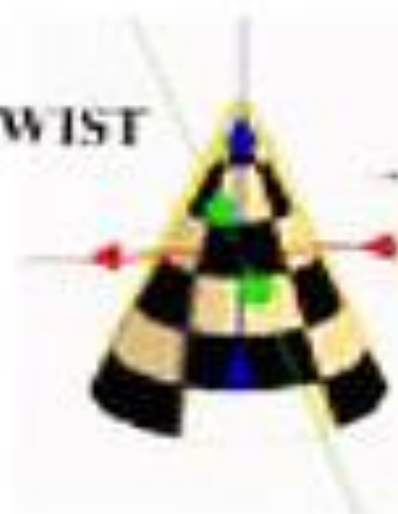
THE CONE



The CONE is a CYLINDER with total top closure,

The Hollow features are the same as with the other shapes, appearing at the bottom first and taking the form of a circle, square, and triangle.

TWIST



H= 0
E= 0



H= 180
E= 0



H= 0
E= 180



H= 180
E= 180



H= 180
E= -180

TOP SIZE



X= 0
Y= 0



X= 1
Y= 0



X= 0
Y= 1



X= 1
Y= 1

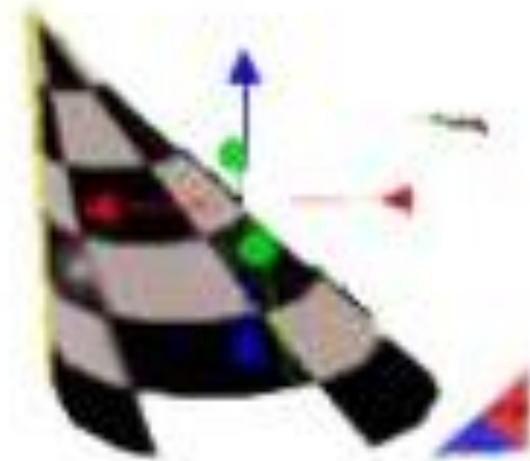




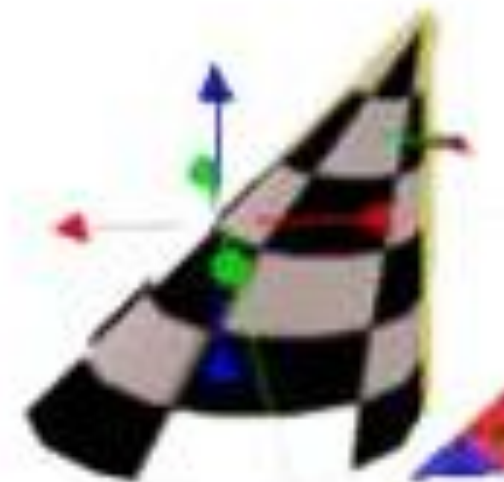
SKEW is the direction in which the prim tips. Here are some examples of skew in a cone.



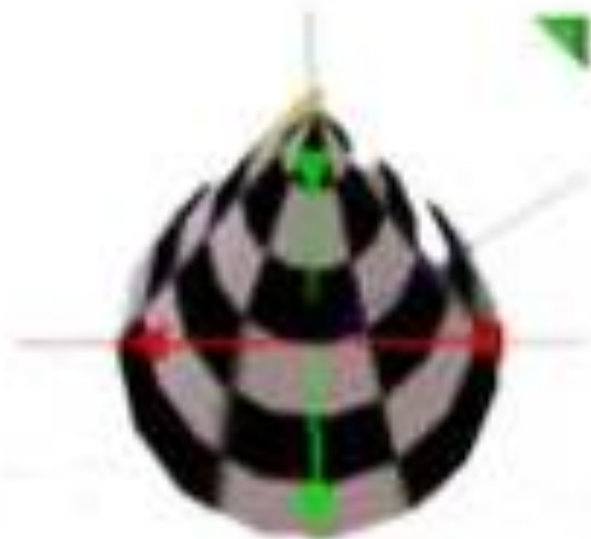
$X=0$
 $Y=0$



$X=.5$
 $Y=0$



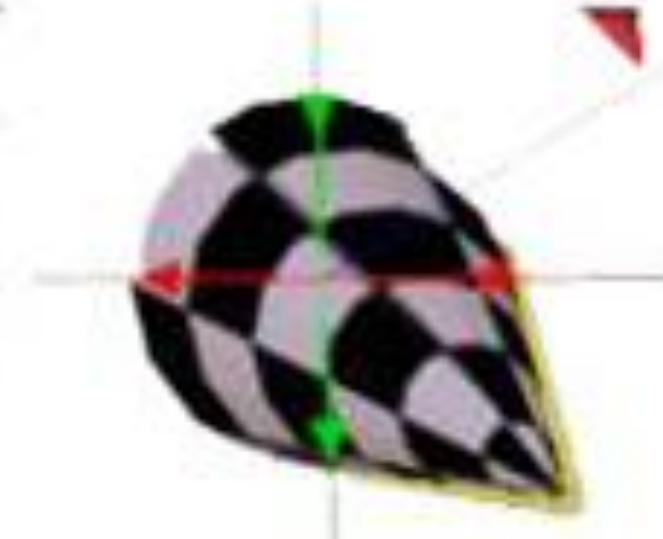
$X=-.5$
 $Y=0$



$X=0$
 $Y=.5$



$X=0$
 $Y=-.5$



$X=.5$
 $Y=.5$





The Half Cone

As you may guess by now, the Half Cone is a half-cone.

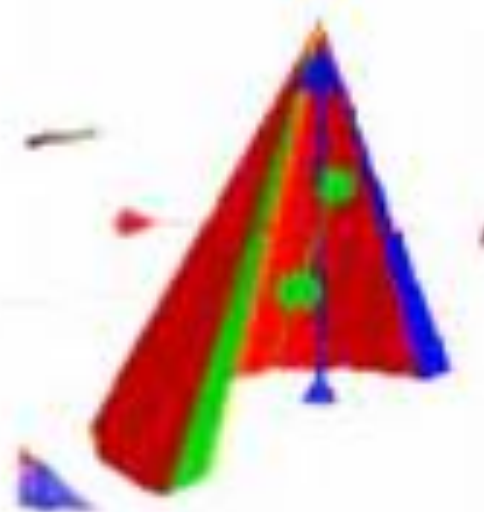


You may also note, that there are 4 surfaces. Bottom, outside and the two halves of the inside.

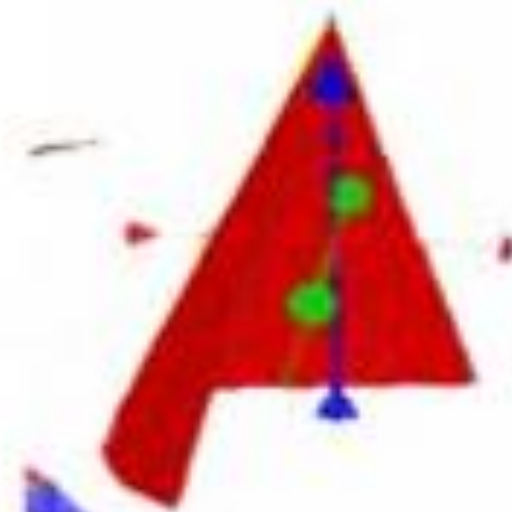
Most of the changes in it are very similar to simply taking a cone and

doing a .25 Beginning Cut and .75 End cut on a Cone.

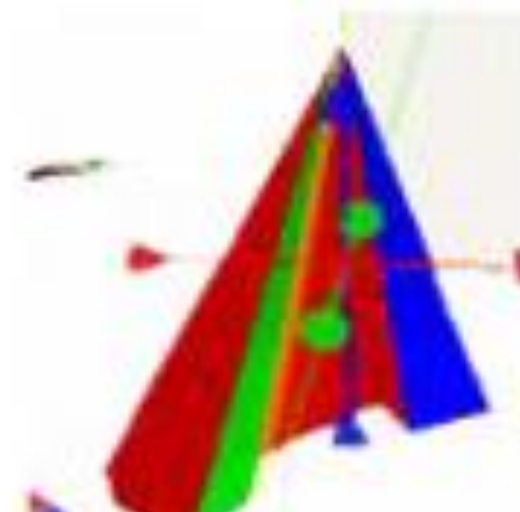
The HOLLOW of the Half Cone here is shown with a .75% hollow in order to show the textures of the flat side.



HOLLOW TYPE:
Circular
(Default)



Square



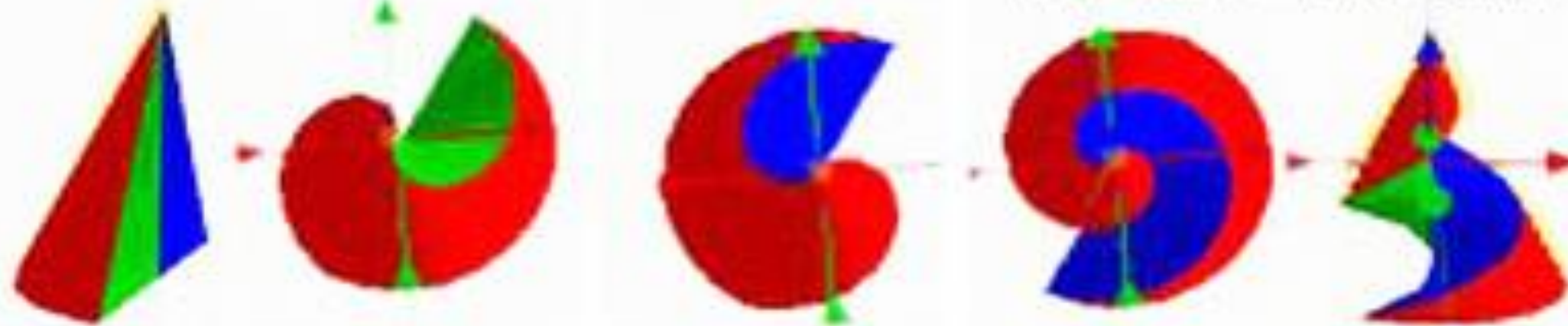
Triangular





TWIST - Representative Top and Side views

TOP VIEW SIDE VIEW



$X = 0$
 $Y = 0$

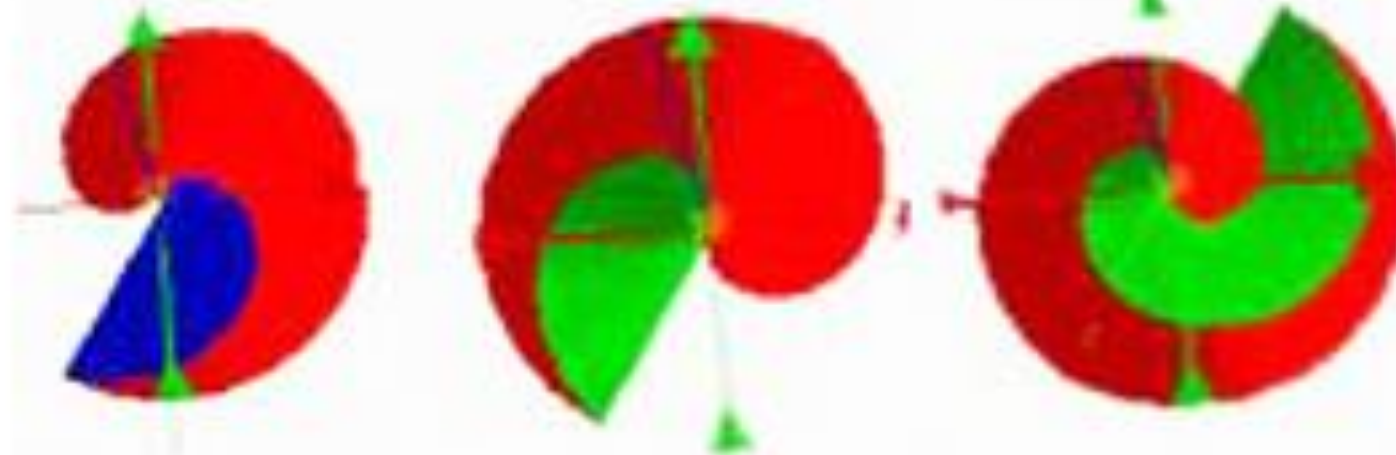
180
0

0
180

-180
180

-180
180

(TOP
VIEW)



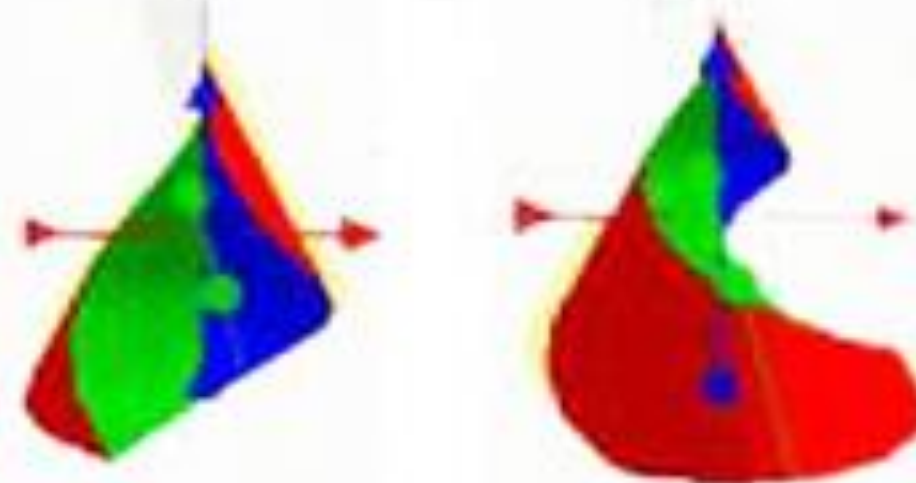
$X =$
 $Y =$

-180
0

0
-180

180
-180

(SIDE
VIEW)

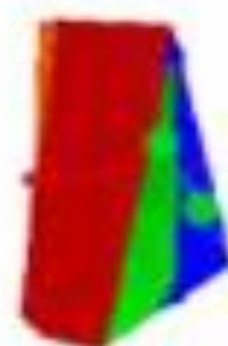




TOP SIZE



X = 0
Y = 0



1
0

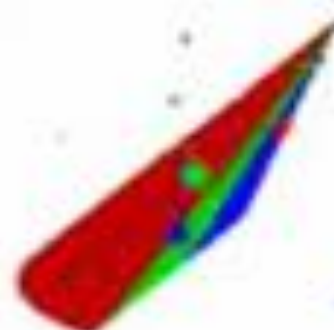


0
1

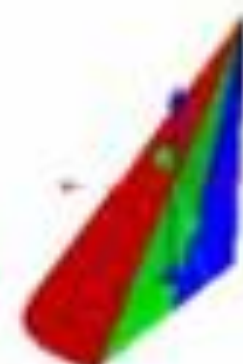


1
1

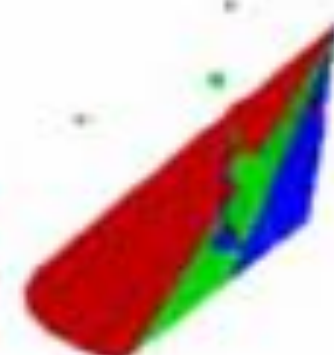
SHEAR



X = 50
Y = 0



0
50



50
-50



50
50

X = -50
Y = 0



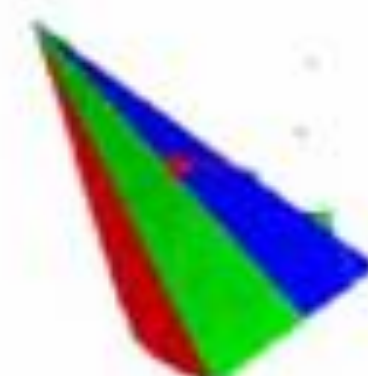
0
-50



-50
50



-50
-50





The CUBE

The Cube is a family of a 4-sided box (a cube), a right sided triangle, a pyramid (4-sided base), and a prism (3 sided base).

These images are from above so that you can see top and sides.



Cube



Right-Sided
Triangle



Pyramid



Prism

We will start with a Cube, the default.

1. Left click on the Cube that you have created.
The pie menu that you had when you first created the cube will appear.
2. This time, left click on "EDIT."
You will have the rectangular selection box.

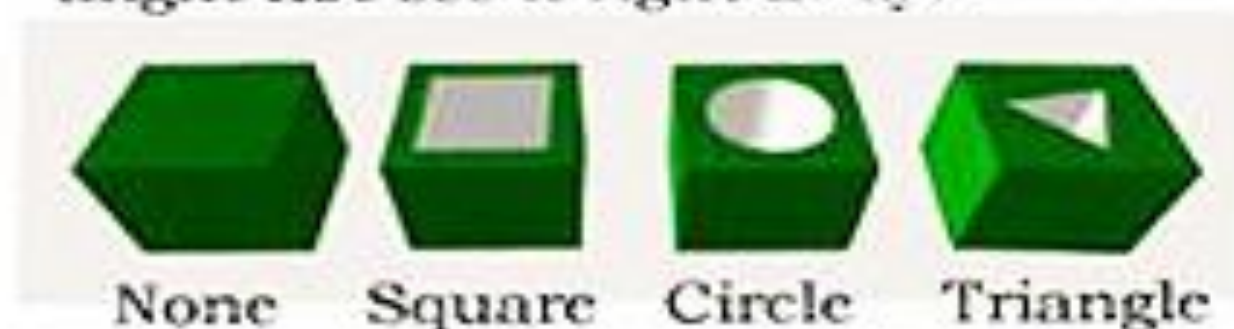




Often you will want to HOLLOW your prim. This is handy in building rooms in houses, windows, picture frames, arches, garden plots, making dishes or jewelry or foods.

Default=0 (the closed position) You can go to 95% but no further.

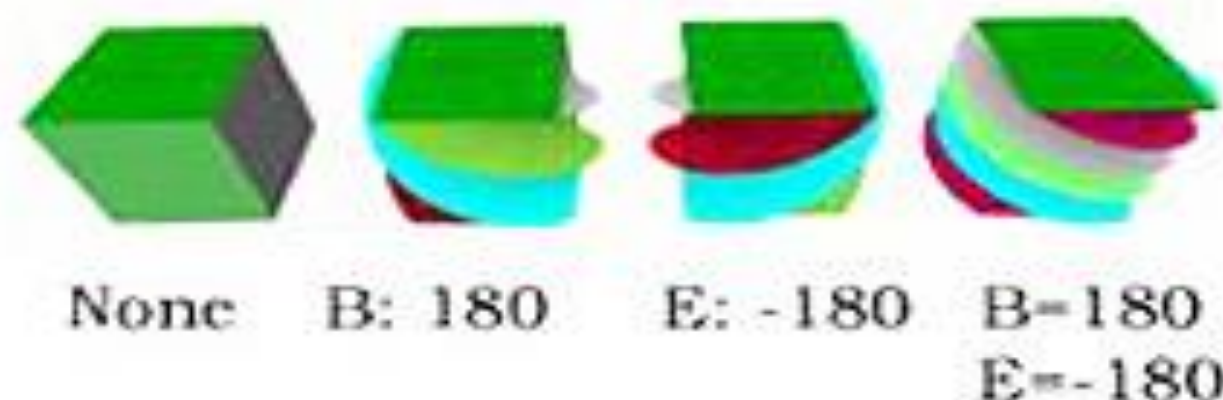
*****NOTE: Frequently, the hollow is at the bottom or top of the object so if you are looking at the side, you might not see it right away. *****



As you can see, you can also choose the shape of the hollow.

TWIST BEGIN AND END

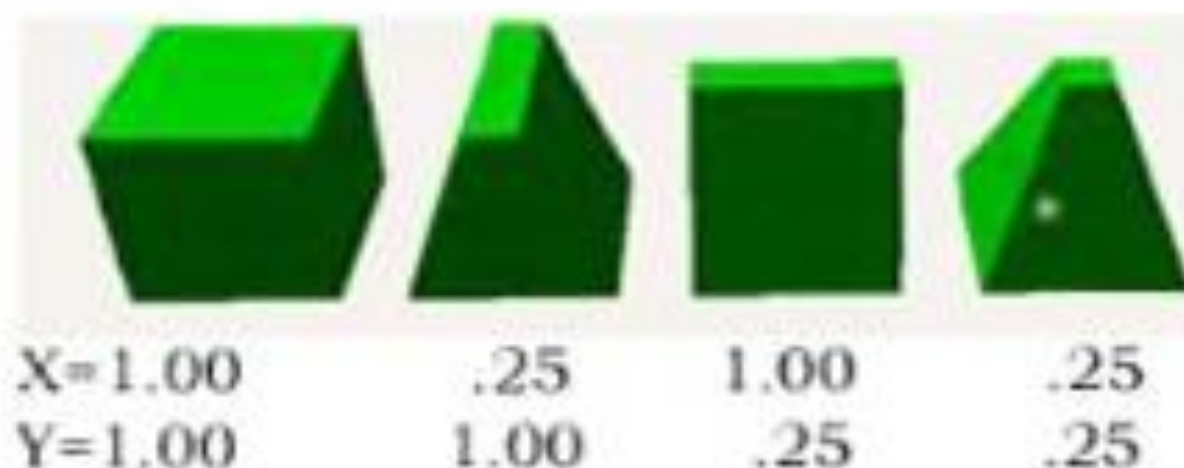
Use the up and down arrows next to Begin/End.





Changing TOP SIZE is a wonderful tool in making roofs! (or pig troughs)

The X value is closed at 1.000 (default). Again, in most cases, this is the forward/back horizontal. Y is the side to side horizontal. You can increase the size by using the little "up" and "down" arrows at the side of the value.



The final prim enhancement is SHEAR.
SHEAR gives you a slant to your prim. (Hmmm, a little on the slant... ahh well.)

No Shear

X= 0	0	+50	-50	0	-50	+50
Y= 0	+50	0	0	-50	+50	-50





The CYLINDER

The next shape to explore is the **CYLINDER Family**. The Cylinder Family consists of 4 basic prims: The **Cylinder** (of course!), **Half Cylinder**, **Cone**, and **Half Cone**.



Cylinder



Half Cylinder



Cone



Half Cone

Basically, your modification choices are very similar to that of the cube: cut, hollow, hollow type, top size, twist, and shear.

Cylinder



Cut: Beginning
End

0
1



.25
1



1
.75





Cylinder:

Hollow: none

90%

90%

90%



Hollow Type:

Circle

Square

Triangle

Twist: None

B=180

E=-180

B=180, E=-180





Top Size

X = 1.00
Y = 1.00



.25
1.00



1.00
.25



.25
.25



Shear

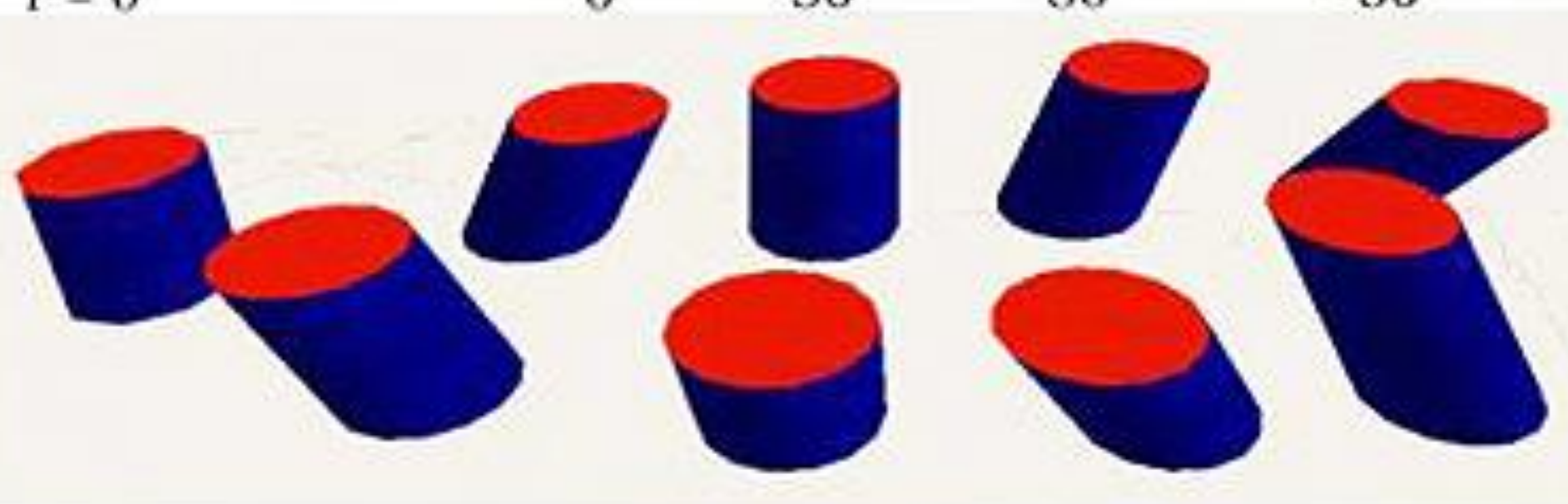
X = 0
Y = 0

50
0

0
50

50
50

50
-50



X =
Y =

-50
0

0
-50

-50
-50

-50
50





THE HALF CYLINDER

Half Cylinders are just that... a cylinder cut in half. So many of the modifications that you can do are the same as if you took a cylinder, cut it in half and then performed the modifications on them... many but not all.

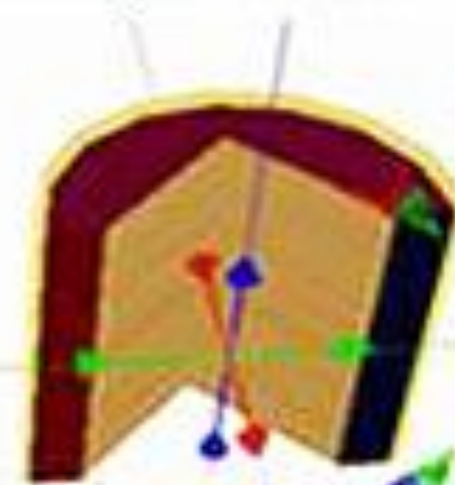


**** Notice that there are actually 5 surfaces in a half cylinder: top, bottom, outside, left and right inside. ****

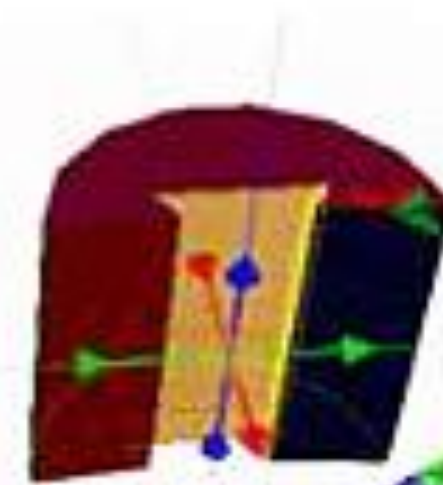


Hollow: 90%

Type: Circular



Square



Triangular

Cut: is the same as with the cylinder. The half cylinder is already cut at Beginning = .25 and End = .75.





Twist:

$$B = 180$$

$$E = 0$$

$$B = -180$$

$$E = 0$$

$$0$$

$$180$$

$$0$$

$$-180$$

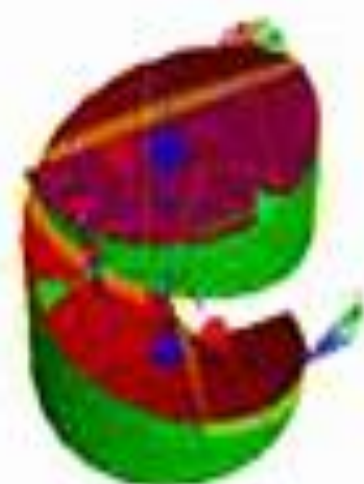


$$B = 180$$

$$E = -180$$

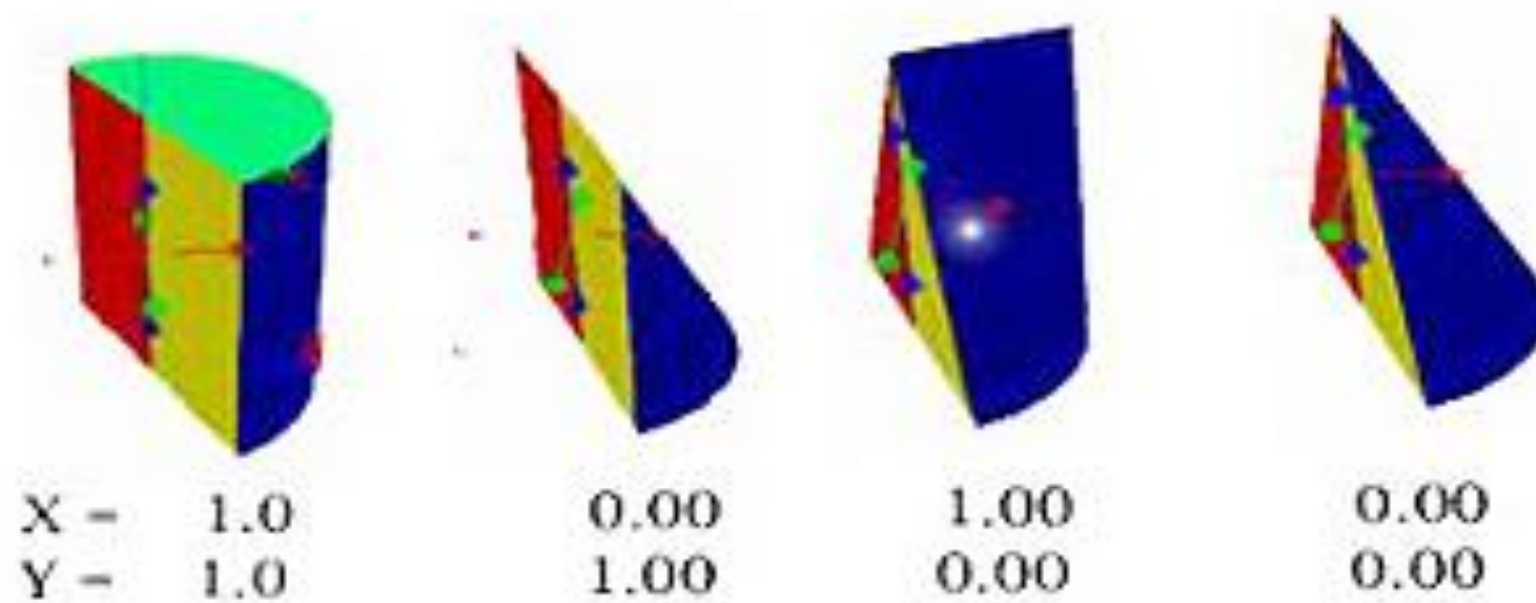
$$B = -180$$

$$E = 180$$

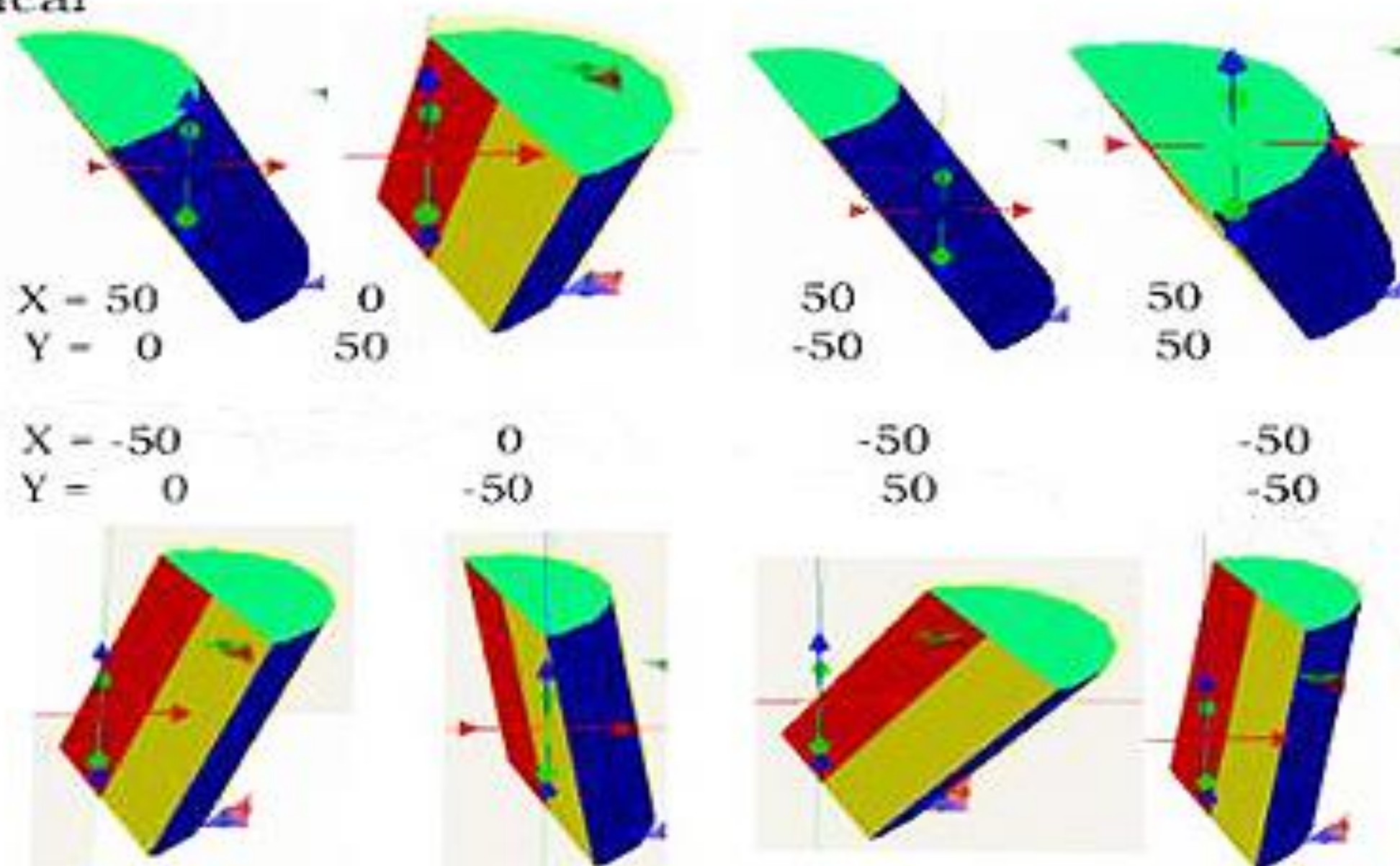




Top Size



Shear





THE PRISM

A PRISM is a three sided, three cornered pyramid.



It has the same options as does the box and the right sided triangle: cut, hollow, top size, twist, and shear.

As you could guess, the beginning cut and the end CUT produce similar results.



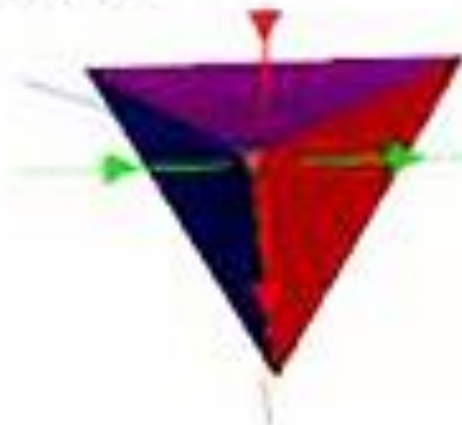
And the HOLLOW works the same way as in the previous shapes. It appears on the bottom of the prim and you can use the standard circle, triangle and square to modify your hollow.





TOP SIZE:

X=0
Y=0



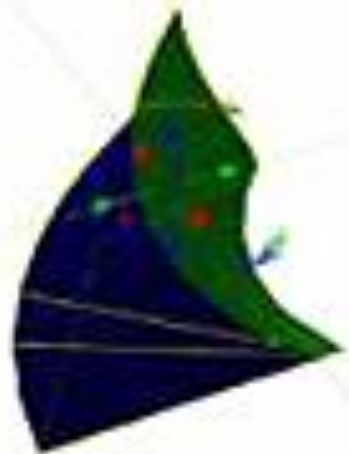
X=50
Y=0



X=0
Y=50



TWIST



B= 180
E= 0

-180
0

0
180

0
-180

180
-180



The B (Beginning)
are the opposite
of the E (End)
images.





THE PYRAMID

The Pyramid is the third of the box shapes in your "Create" menu.



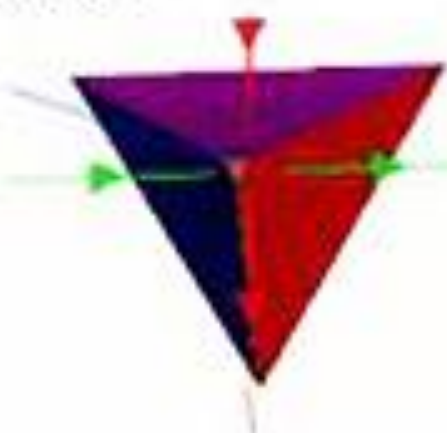
As you can see, it has a point at the top and a four cornered/four sided base.





TOP SIZE:

X=0
Y=0



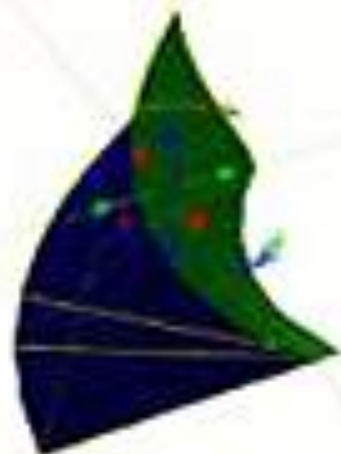
X=50
Y=0



X=0
Y=50



TWIST



B= 180
E= 0

-180
0

0
180

0
-180

180
-180

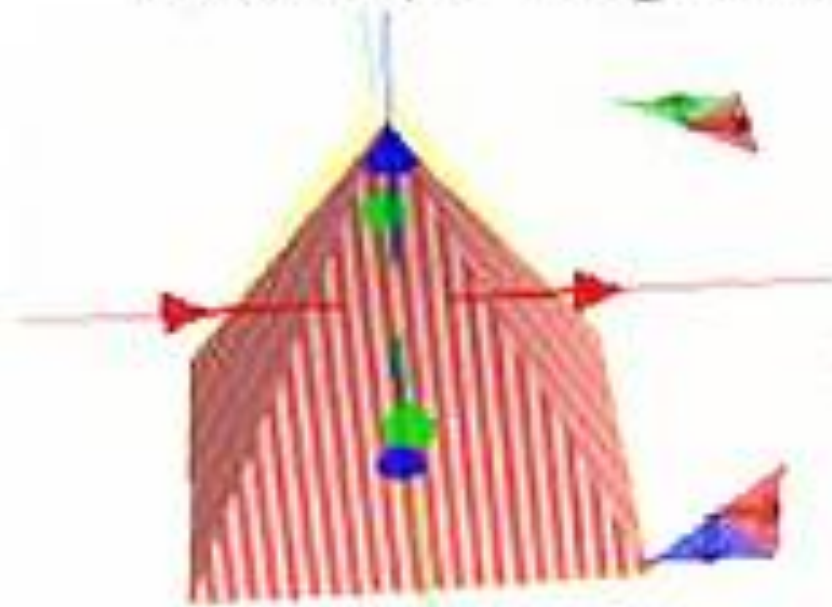


The B (Beginning)
are the opposite
of the E (End)
images.

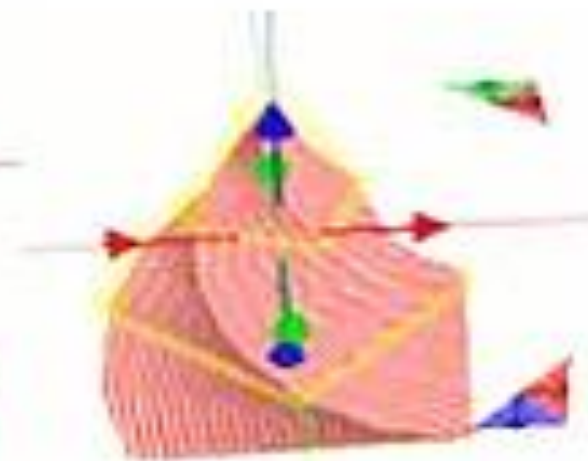




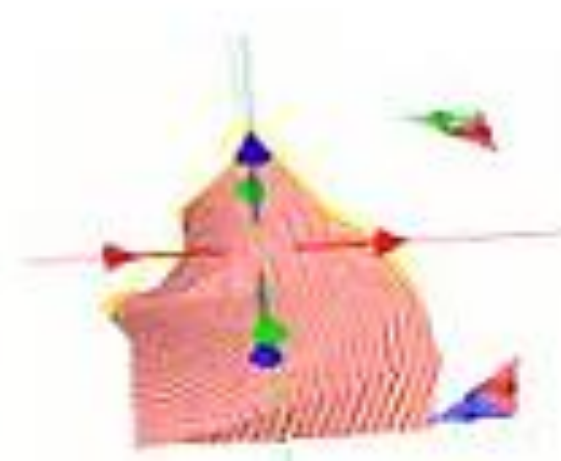
Twist: (B=Beginning, E=End)



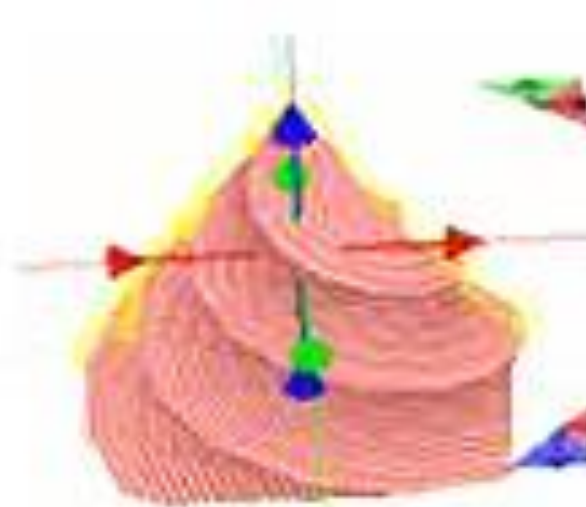
B= 0
E= 0



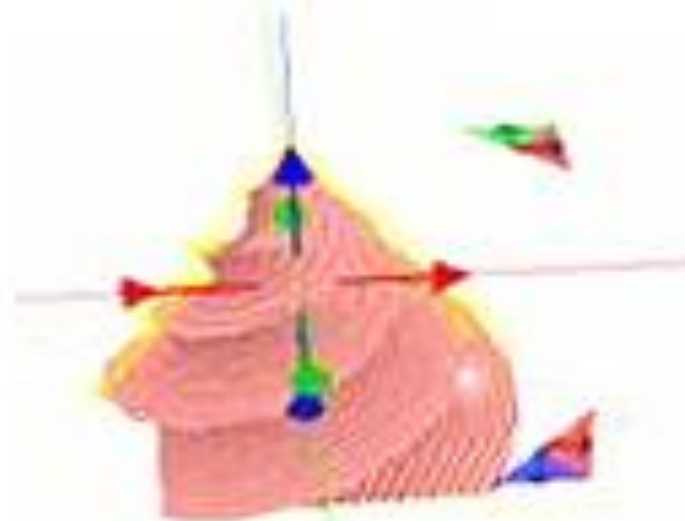
180 0
0 or -180



0 -180
180 or 0



B= 180
E= -180

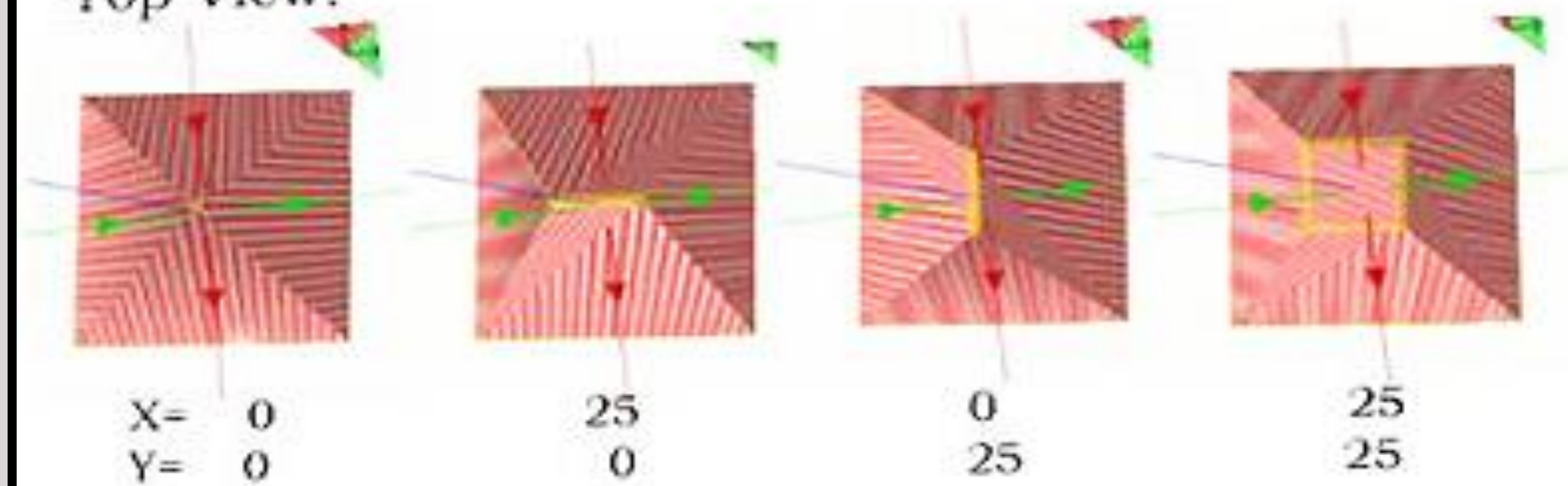


-180
180

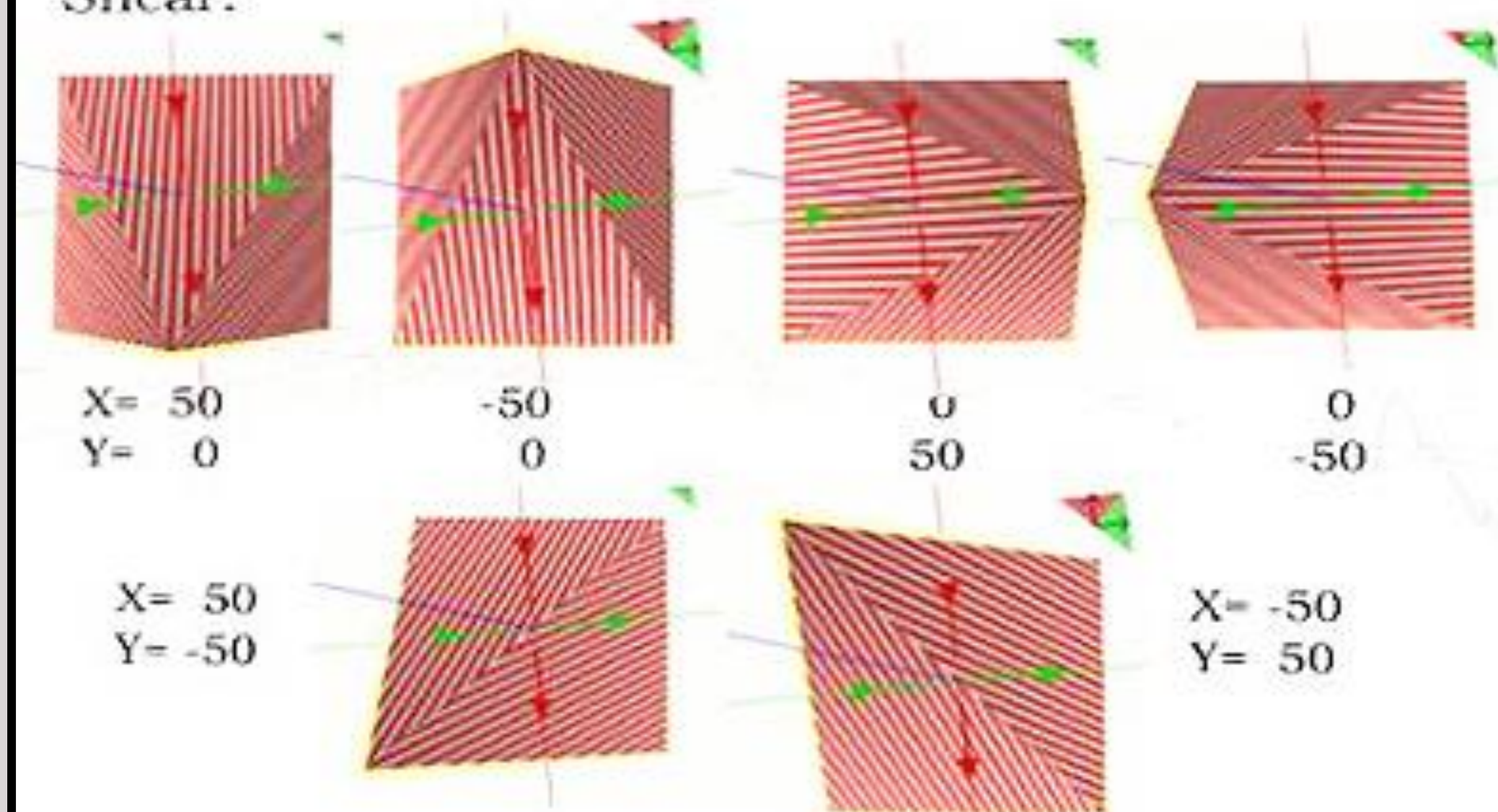




Top View:



Shear:





THE RING

The Ring looks like an upside down wastebasket without a bottom.



CUTting it using the Beginning or End cuts slice it vertically resulting in an almost triangular shaped cut.

HOLLOW results in a default triangular shape.



HOLLOW SHAPE



Triangular



Circular



Square

SKEW



.95

Top View



-.95

Top View

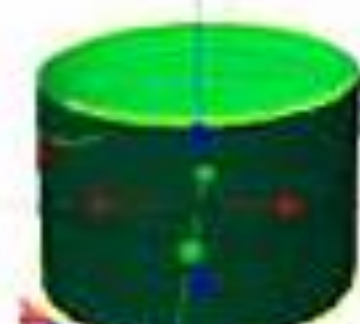




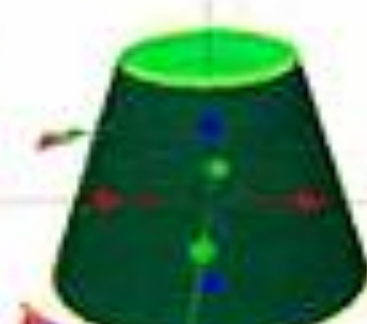
HOLE SIZE Default is $X = 1.00$, $Y = .25$.



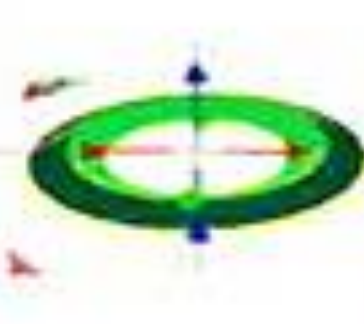
$X = 1.00$
 $Y = .25$



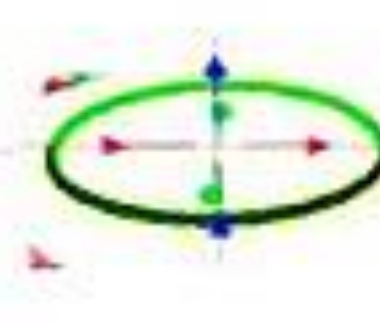
1.00
 $.05$



1.00
 $.50$



$.05$
 $.25$



$.05$
 $.05$

TWIST

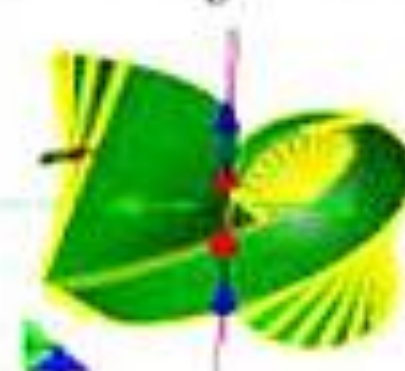
When both the Beginning and End Twists are full (360) in either the positive or negative position, it is as if they were never twisted. They look like the default, intact state.



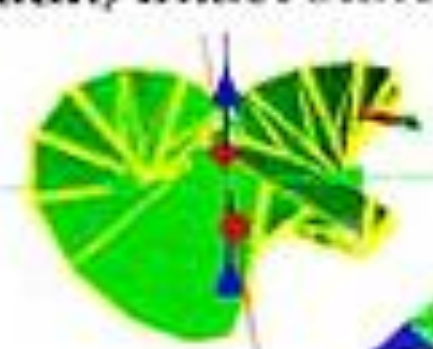
$B = 360$
 $E = 0$



-360 Side and Top
 0 Views



0 Side and Top
 -360 Views



-360
 360

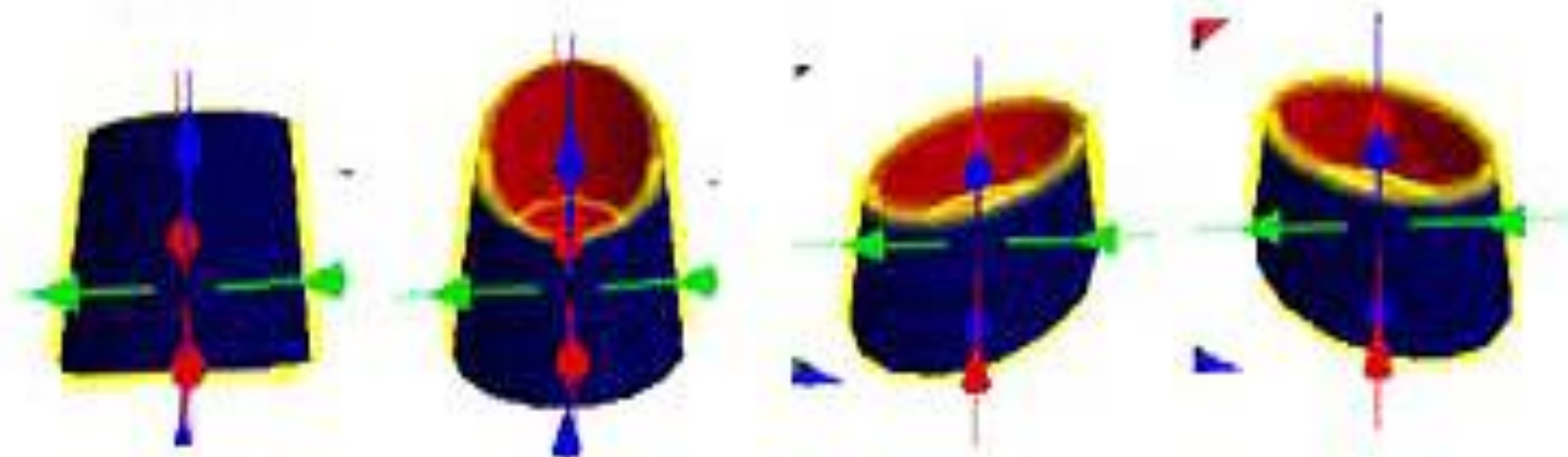


360
 -360





TOP SHEAR

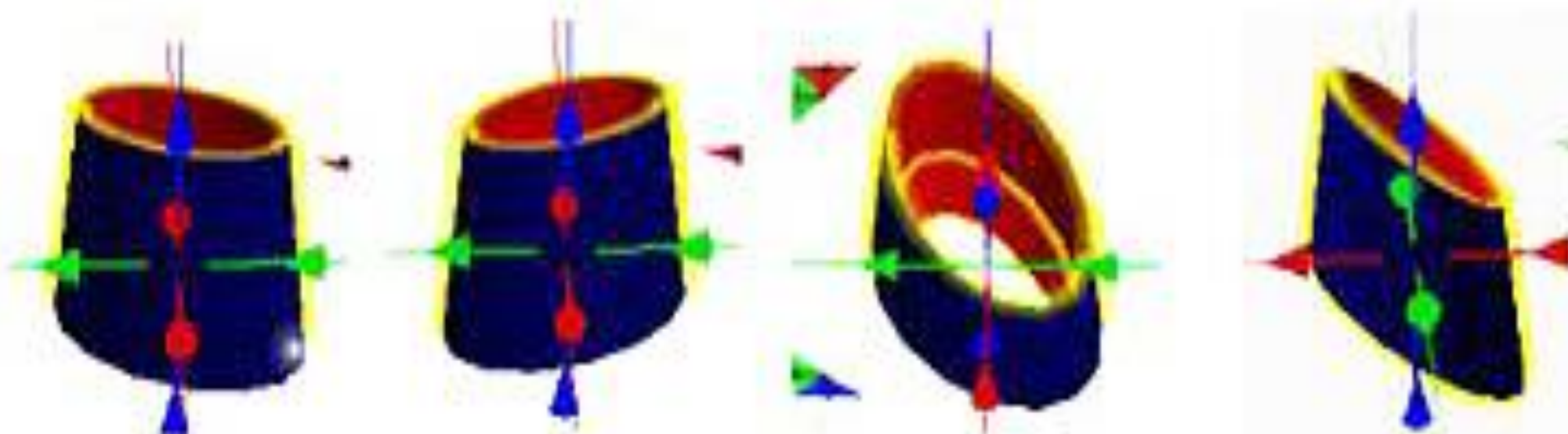


$X = 50$
 $Y = 0$

-50
0

50
-50

50
50



$X = 0$
 $Y = 50$

0
-50

-50
50

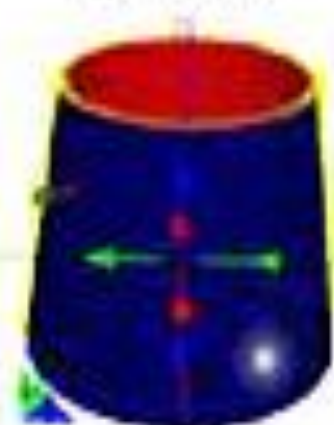
-50
-50





ADVANCED CUT The Advanced Cut in the Ring provides some interesting changes as it progresses, as did the Torus and the Tube. Therefore, I included a few extra steps where you may recognize objects you can make from the Ring.

Default



$B = 0$
 $E = 1$

The smallest values



.03
.05



0
.35



.28
.30



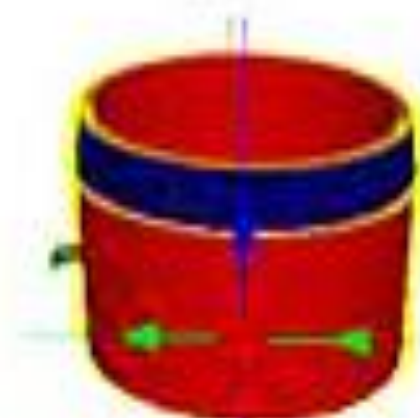
$B = .35$
 $E = .50$



.35
.70



.35
.85

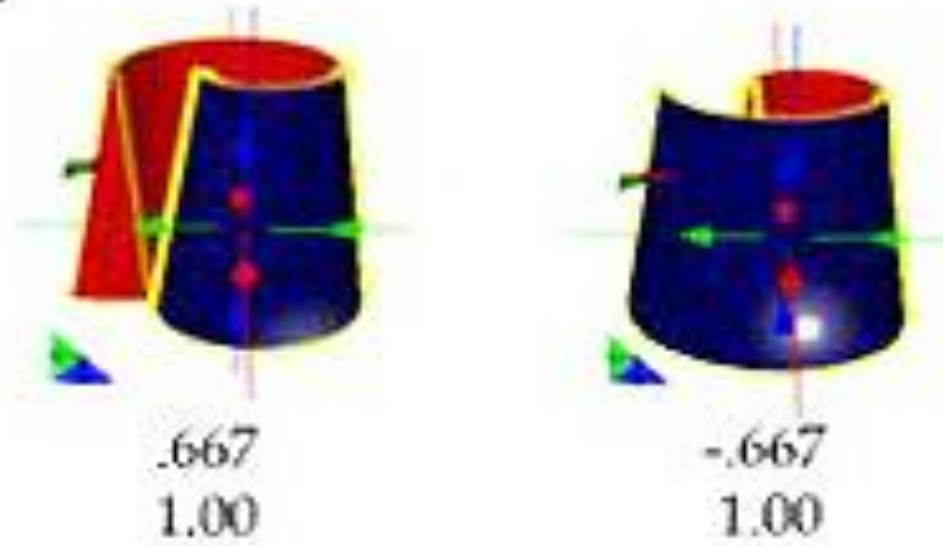


.95
1.0





RADIUS DELTA



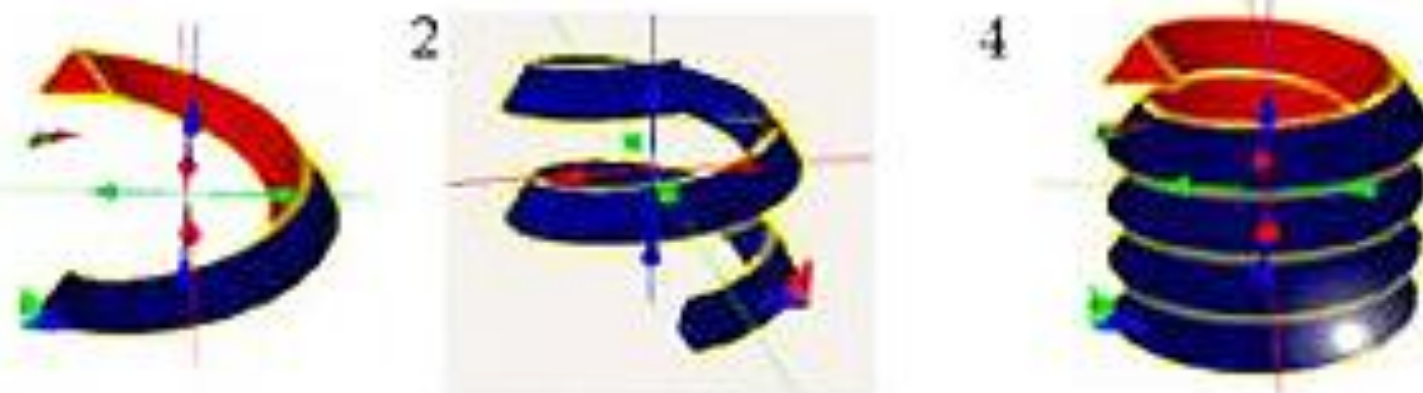
REVOLUTIONS

Rotation = 1

*Notice how
the ends are
triangular.

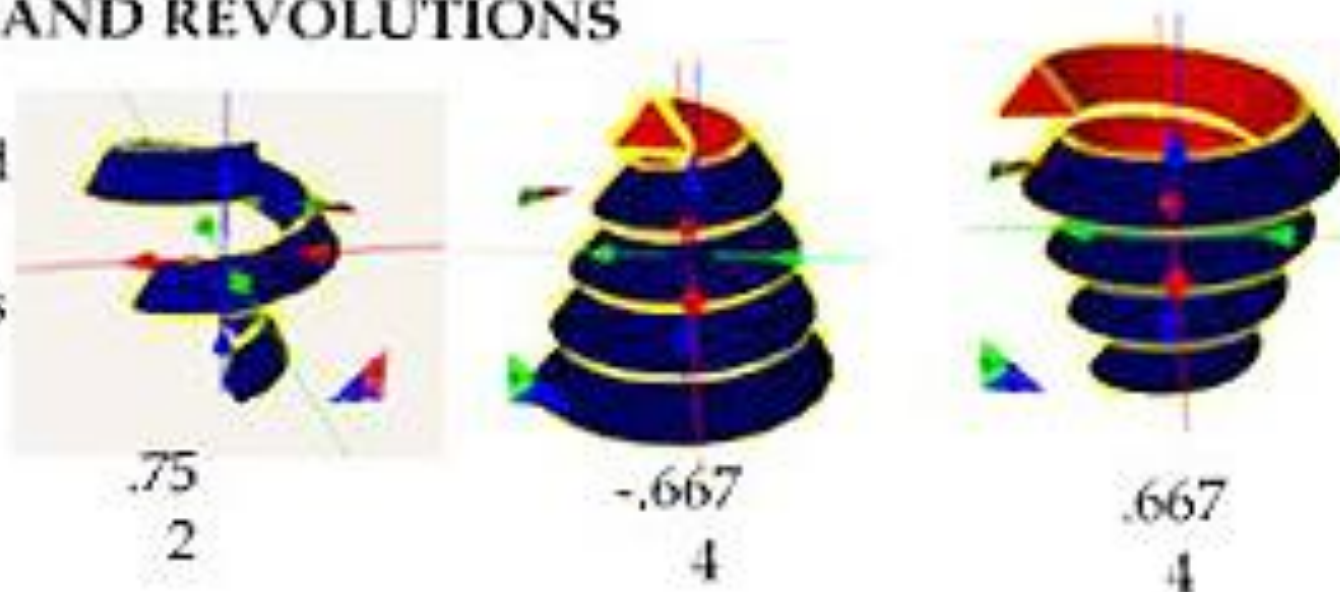
This will help

you identify a Ring when trying to identify the prims used in an object.



RADIUS DELTA AND REVOLUTIONS

When combined
Radius Delta
and Revolutions
create a spiral
effect.





THE SPHERE

A **SPHERE** is a ball and is also the basis for the half sphere (cup shape).



When you **CUT** it, the inside actually has two surfaces rather than the single surface that you might expect. This sphere has a 30% Beginning cut.

(Note - I textured and colored each surface so that you can see them.. Normally, they are the wood default.)

If you **HOLLOW** the sphere, you will notice that there are now 3 surfaces added to the single outer surface.

The default is always a circular cut which can be changed to a square hollow or a triangle hollow by selecting them in the **HOLLOW SHAPE** choice box.



Circular Hollow
30% cut



Square
50% cut

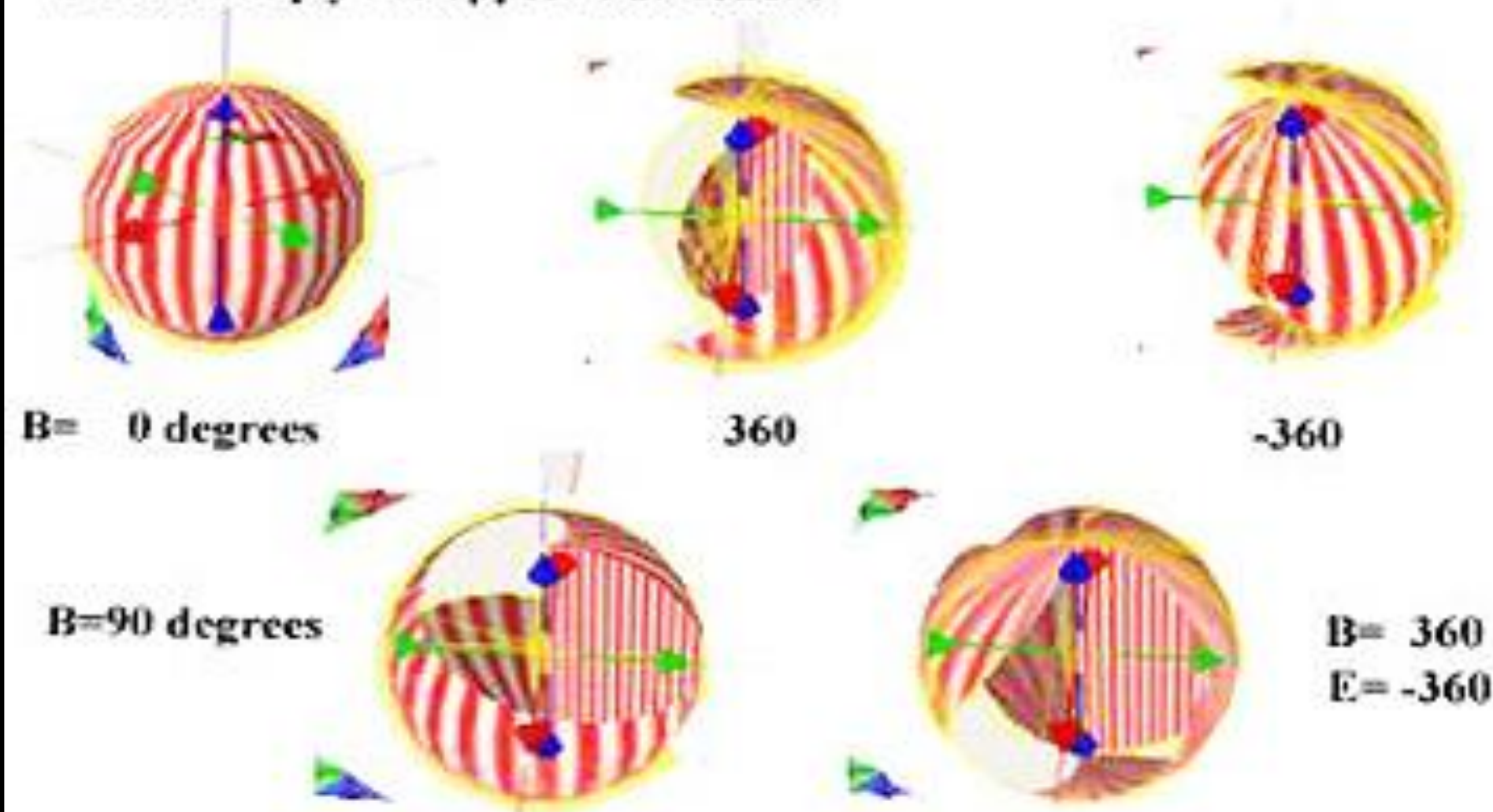


Triangular
50 % cut

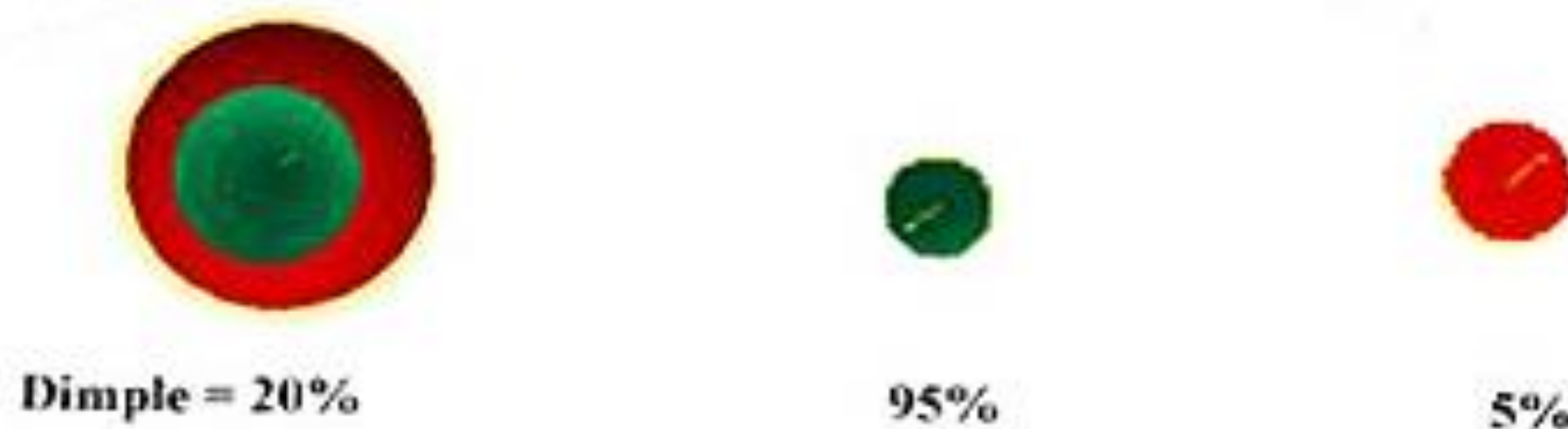




Now, let's say you want to TWIST your sphere. Very strangely, the pattern will take on some hollow spots. These show the beginning twist. An end twist is simply the opposite direction.



The last choice you have in using the Sphere is DIMPLES:





THE HALF SPHERE

As you may have guessed, the HALF SPHERE is merely a sphere cut in half. The cut was created along the end of the sphere at the 50% level. However, if you wanted to create your own from a full sphere, you can do it from any point, beginning or end, as long as the total cut is 50% (.50).



CUT



B = .25
E = .50

0
.25

0
.75

In case you didn't start at the beginning and follow the tutorial all the way through, I colored each portion of the half sphere to show its surfaces. Your prim will be only wood colored.

HOLLOW AND HOLLOW TYPE

In order to show you the shape of the hollow more clearly, the Half Sphere was only hollowed to 70% (.70).

The Hollow Types to the right are Circular, Square and Triangular, in that order.





TWIST is an interesting feature with the half sphere, just as it was with the sphere. Some of the surfaces become invisible. Make sure you take a look at your twisted half sphere from all sides if you are prim torturing, because you may be amazed with your possibilities.

*****NOTE:** Rotations with both directions fully rotated in EITHER a positive or negative direction result in the Default. In addition, a full 360 rotation at the beginning is the same as a full rotation in the negative direction at the end (and vice versa).

For example:



B = 360 0
E = 0 -360



B = 360
E = 0



0
360



360
-360



-360
360





DIMPLE The Dimple is unique to the Sphere family. It is an indentation in the top and/or bottom of your prim.



B = 0
E = 0



B = .25
E = 0



B = 0
E = .75



B = .25
E = .75

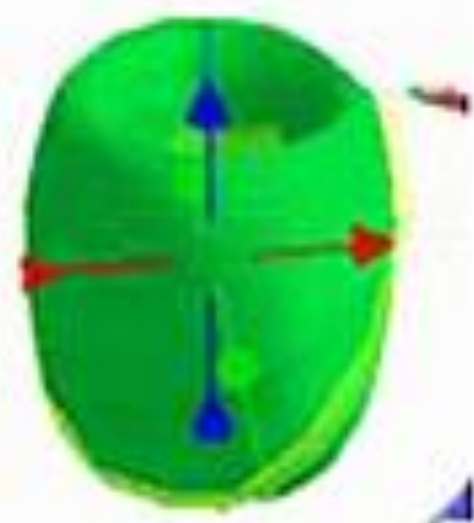




THE TORUS

Ah, the mighty Torus. The Torus can bring you delight and it can drive you mad. So many things can be done with it. Each stage can display a new shape, even within a single modification, so while the changes displayed on these pages are examples, they are not a full representation of the things you will find.

One of the first things you will note is that there is only one surface. All of the other shapes have between 2 and 6 external surfaces.



A second thing that you might note as we go along, is that the cuts and shapes have rounded edges whereas even the sphere in its modifications has sharp edges.

Hollowing can not be seen until there is a cut.





TORUS CUT

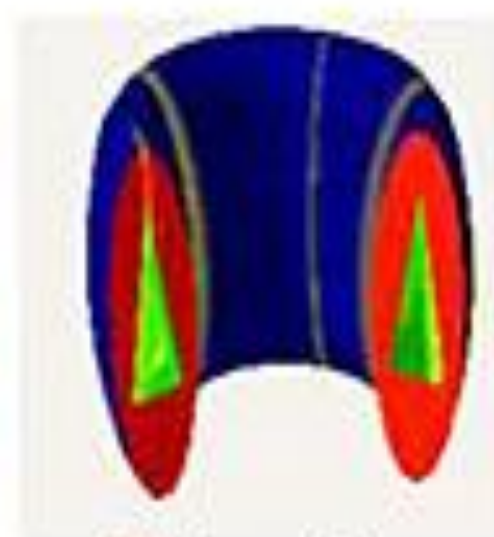
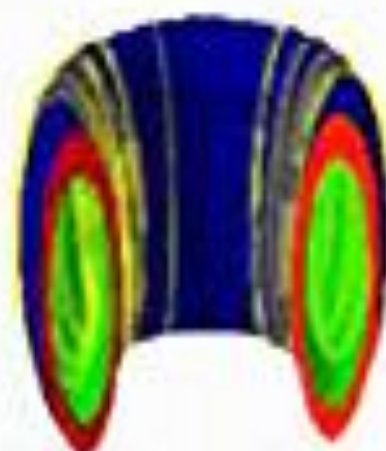
This is a 35% Beginning Cut and is used to also demonstrate the HOLLOWing features of the Torus.

HOLLOW
= 0

75%

75%

75%



Circular

Square

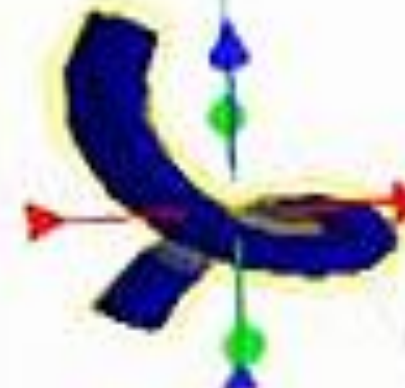
Triangular

SKEW

0

95

-95





TORUS TWIST



B = 360
E = 0

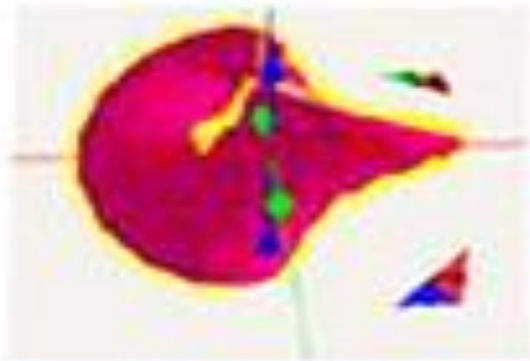


0
360



360
-360

The twist for
360 degrees
in both
Beginning
and End is
the same as
0 degrees in each.



B = -360
E = 0



0
-360



-360
360



-360
-360



B = 360
E = 0

Top View

As you can see by
the these examples,
the top views are
very different (and
even more
interesting) than the
side views.



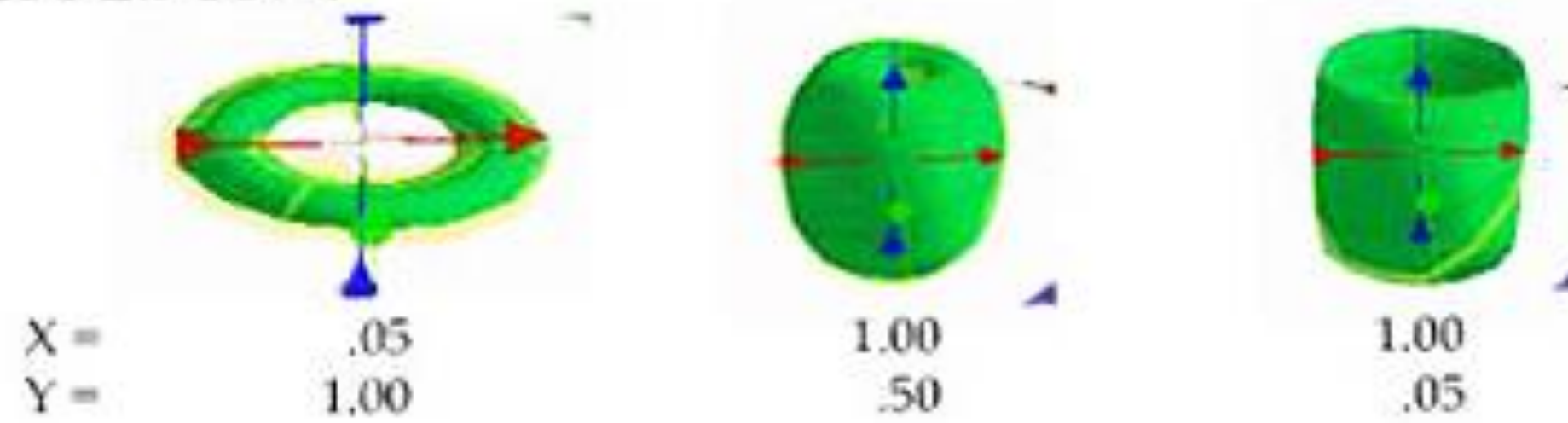
-360
360

Top View

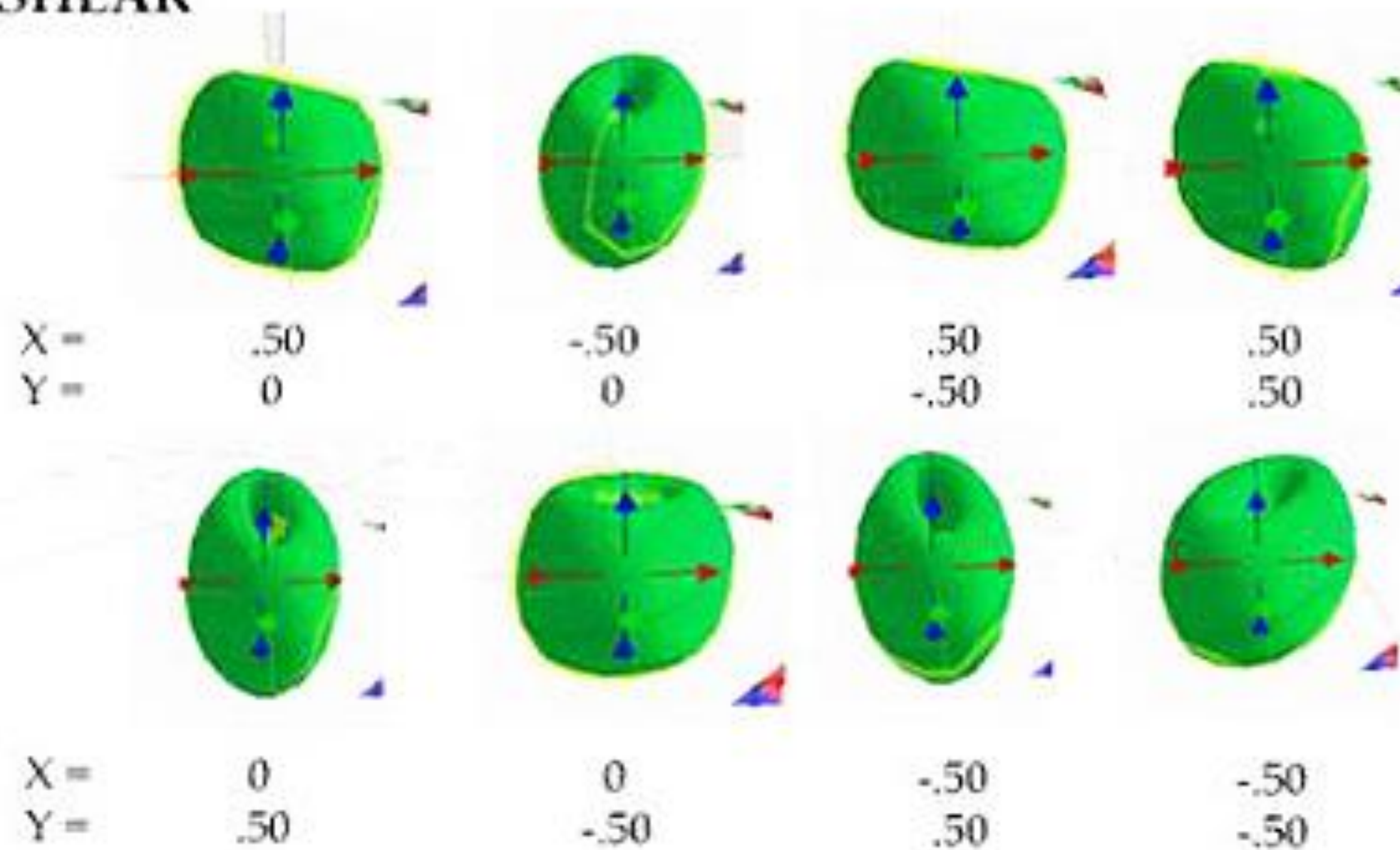




HOLE SIZE

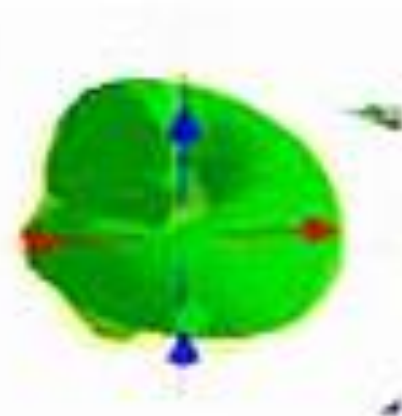


SHEAR

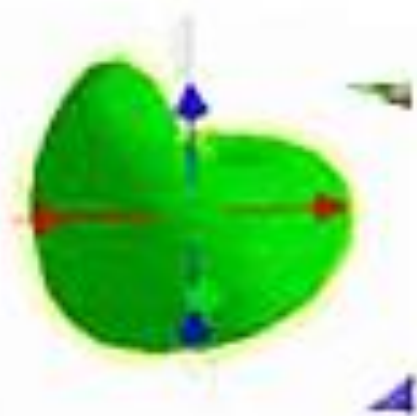




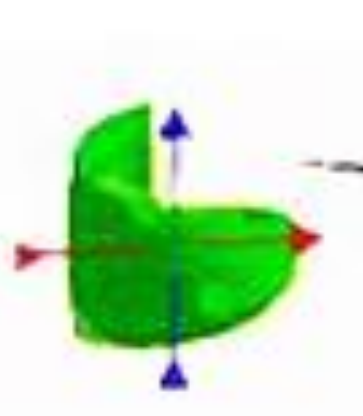
TAPER



X = 1.0
Y = 0



X = -1.0
Y = 0

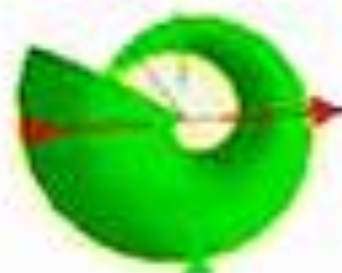
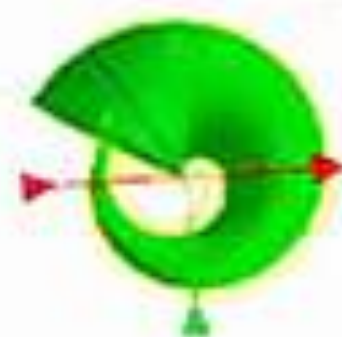
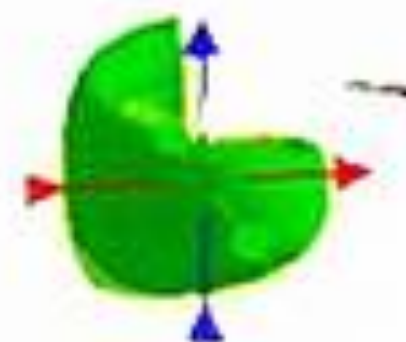
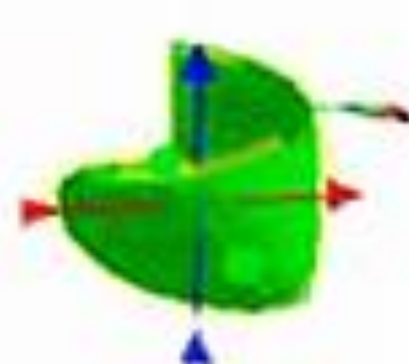
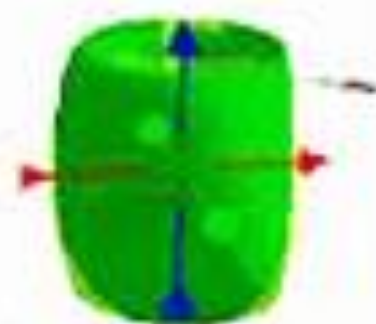
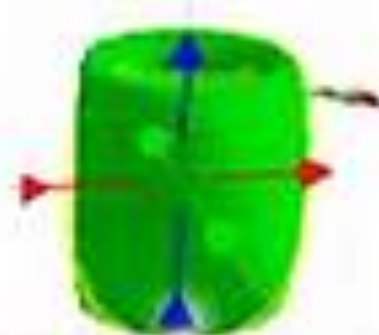


X = -1.0
Y = 1.0



X = 1.0
Y = 1.0

X = 0
Y = 1



The two figures to the left
are the top views of the two
figures above them. So, be
careful to look at changes in
the prims from all angles.
You may be surprised!

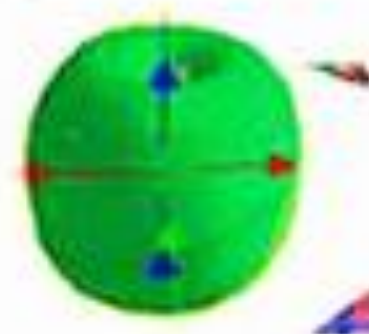




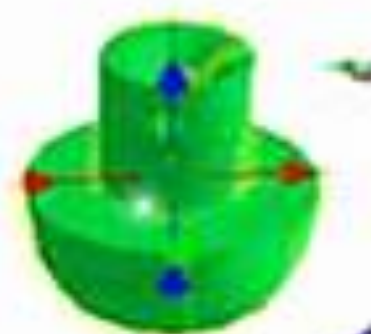
ADVANCED CUT

Rather than simply demonstrating the beginning and end extreme states for the Torus Advanced Cut, I thought I would throw in a few of the intermediate states. At any of the stages in the progression, you can get some really interesting results.

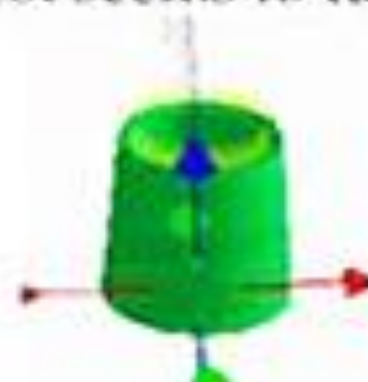
As you "slice down," the Torus almost seems to turn itself inside out.



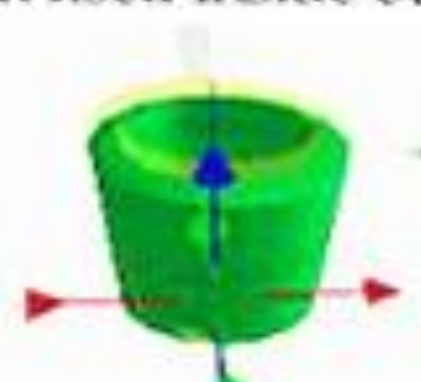
B = 0
E = 1.00



0
.75



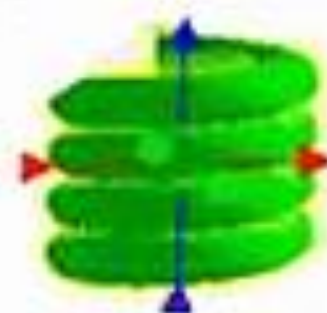
0
.05



.75
0

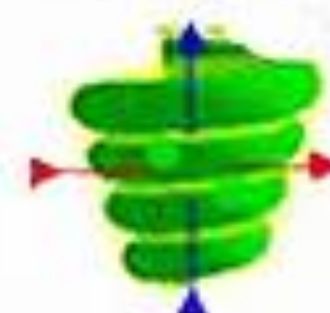
RADIUS DELTA AND REVOLUTIONS

Radius Delta provides a twist with taper from top to bottom. Revolutions are pretty self explanatory. They can go from 0 to 4.



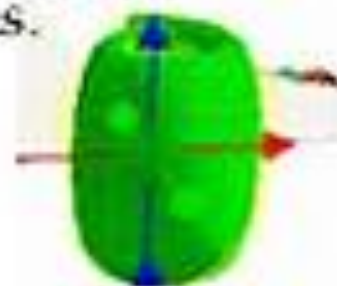
"0" looks like the first torus in the row above. To the left shows 4 Revolutions with 0 Radius Delta. While the one to the right has 4 Revolutions with .67 Radius Delta.

Radius Delta will be explored further on the next page.

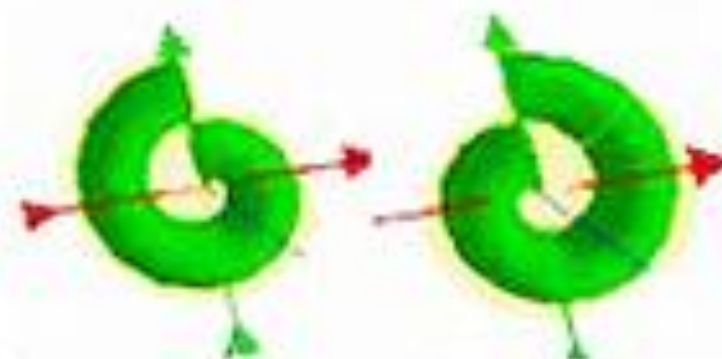




This is a side view of
Radius Delta = .667 if you
have not made any
modifications.

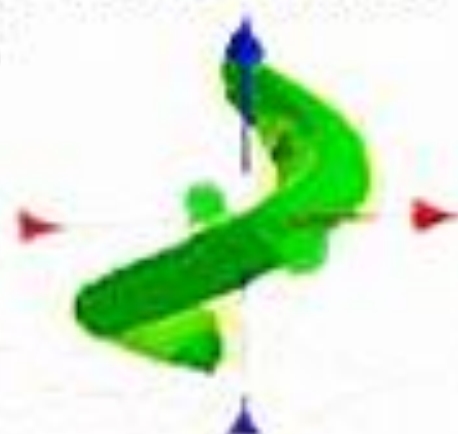


These are top views.



Radius Delta = -.667 and +.667

However, if you have changed
the number of revolutions and
then changed back to the Radius
Delta, you get this at Radius
Delta = .667.



These figures represent a single Radius Delta with a Single Revolution.

***Note: The Torus is a tricky prim. If you find something you like,
make a copy of it, label it, and save it. Otherwise, there is
the chance you will spend hours trying to recapture it. (Or,
at least I have.)





The Tube



The TUBE can bring you some big surprises. Things you expect to happen don't and things you would never expect, do.

Enjoy the twists and turns that it brings. And, remember that like the torus and ring, there are many interesting things in the stages in between what is shown here.

Cut



$B = .25$
 $E = 1.00$



$B = 1.00$
 $E = .75$

Hollow
and
Hollow
Shape



Circular



Square



Triangular





The DEFAULT HOLE SIZE for the Tube is $X=1$, $Y=.20$. However, you can never adjust it lower than .05 for either X or Y. Notice that the hole size does not always have to do with the inner hole. It can also affect, the height of the tube.



$X = .05$
 $Y = .25$

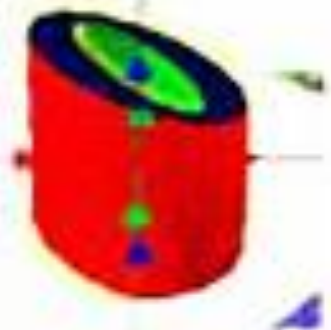


$X = 1.00$
 $Y = .50$

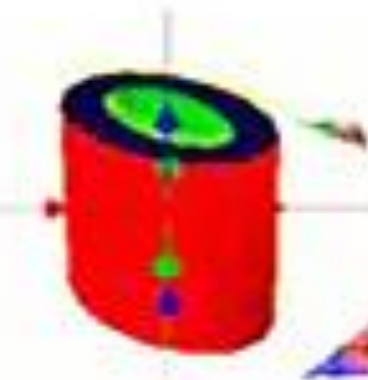


$X = 1.00$
 $Y = .05$

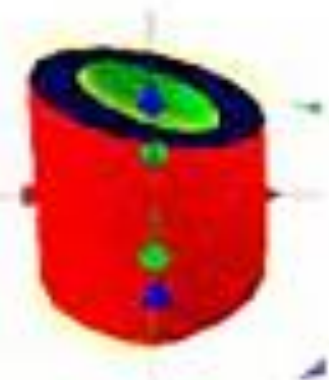
SHEAR



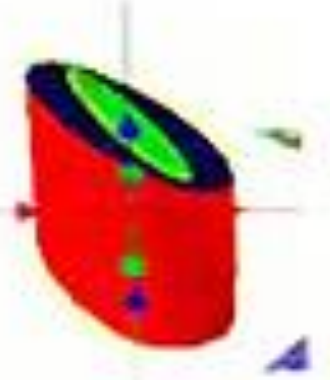
$X = 50$
 $Y = 0$



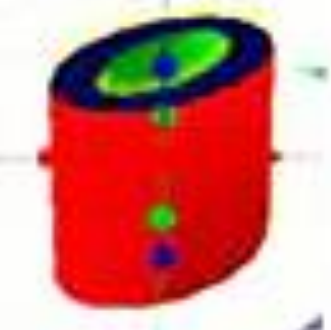
0
-50



50
50



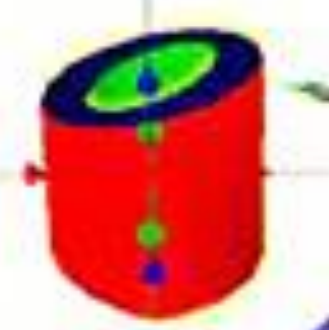
50
-50



$X = 0$
 $Y = 50$



-50
0



-50
-50



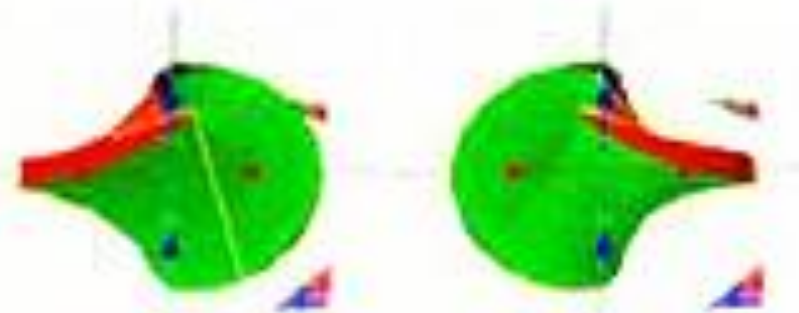
-50
50





TWIST

**** Note:** Twists of positive 360 at both the beginning and end as well as twists of negative 360 at both the beginning and end do not result in a twist. They are the same as the default state.



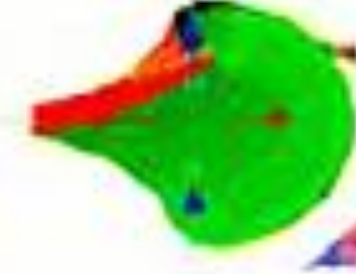
B = 360
E = 0



-360
0



B = 0
E = 360



0
-360

The TUBE presents yet another "twist" in its twists. Notice the similarities between the top and bottom rows on the left here. And, no, it isn't a mistake. I quadruple checked!



360
-360



-360
360



The illustration on the left is the top view of the twist 0/360 shown on the bottom left.

This is a picture of the top right 360/-360 twist from the top.



Thinking flowers anyone?





ADVANCED CUT

The Default is $B = 0$ and $E = 1$.



$B = 0$
 $E = 1$



$B = .20$
 $E = 1$



$B = .40$
 $E = 1$



$B = .60$
 $E = 1$



$B = 0$
 $E = .30$



$B = 0$
 $E = .05$



$B = .03$
 $E = .05$

****Note of Caution:** When working with a tube, do not color the prim before changing its shape. As it turns inside out or changes, the outside color takes over.





TAPER



X = 1
Y = 0



X = -1
Y = 0



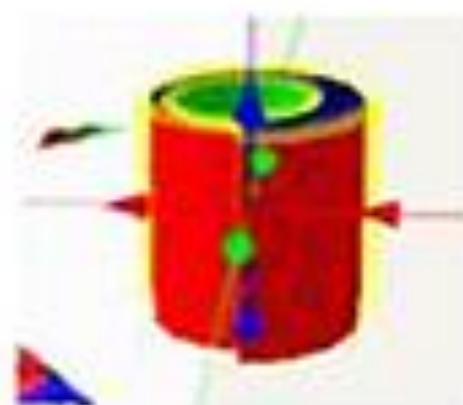
X = 1
Y = -1



X = 1
Y = 1



X = 0
Y = 1



X = 0
Y = -1



X = -1
Y = 1



X = -1
Y = -1



Top view





RADIUS DELTA

.75
Side
View



-.75

Top
View



REVOLUTIONS

- 4





BEGINNING AND END CUTS

Again, I colored the various surfaces of the prim so that you can see the changes more easily. Your product will be wood color, the default. (I cover color application in the Mighty Prim Series III: Prim Priming, the Application Tutorial.)

Beginning
cut=25%
(.25)



End Cut=75%
Notice how different
than the cube.

HOLLOW

The settings are:
Hollow=75%,
(You are looking at
the bottom of a
right triangle prim.)



square



triangle



circle

TWIST



Beginning= +180

-180

End=+180

-180

Beginning +180
End -180



Beginning +180
End +180

