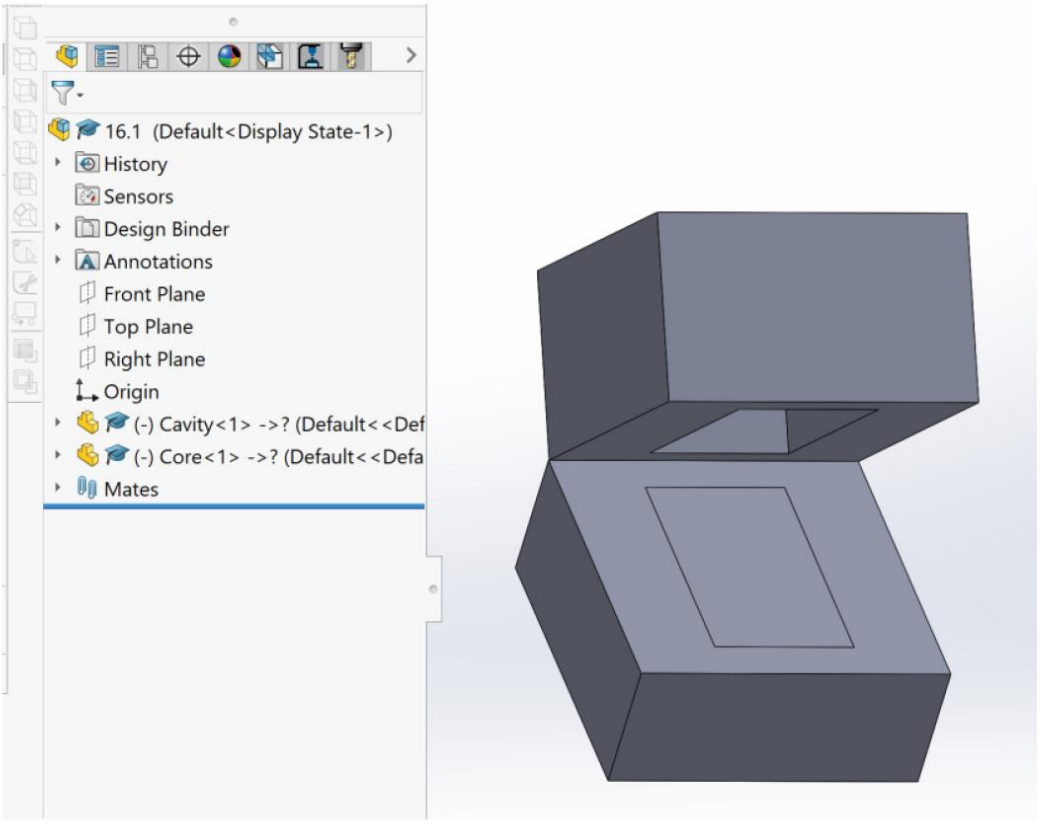
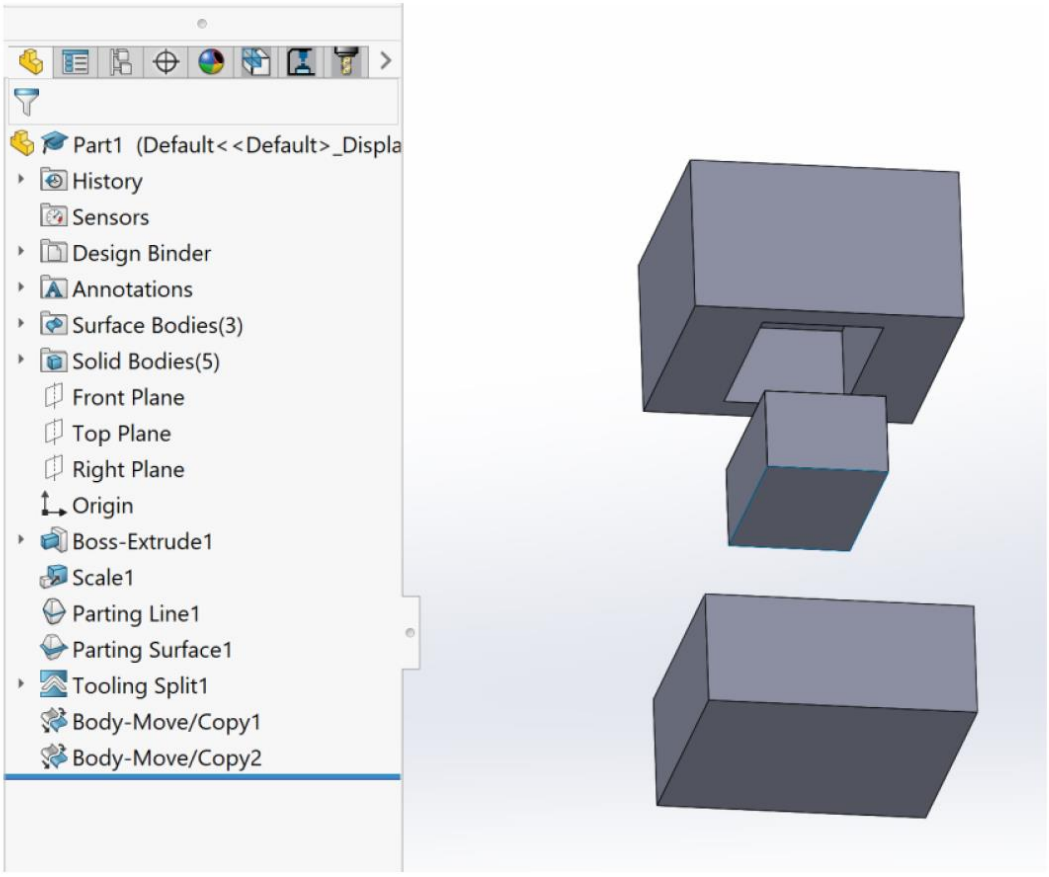
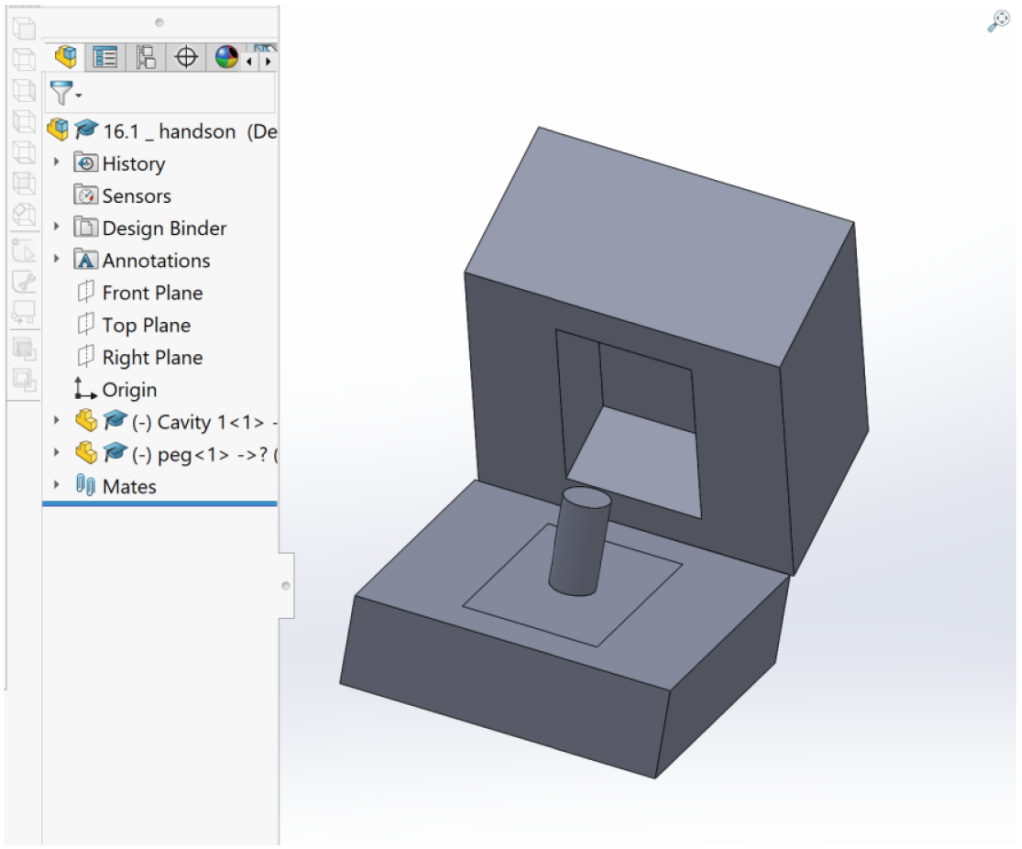
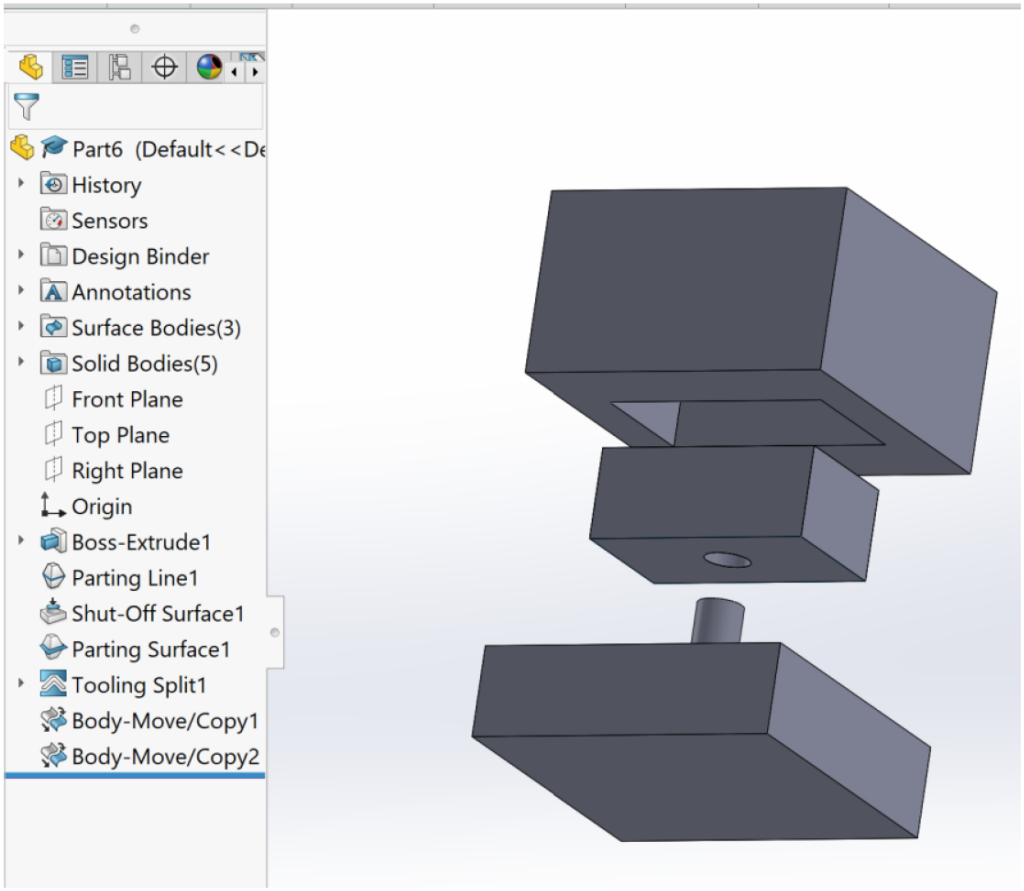
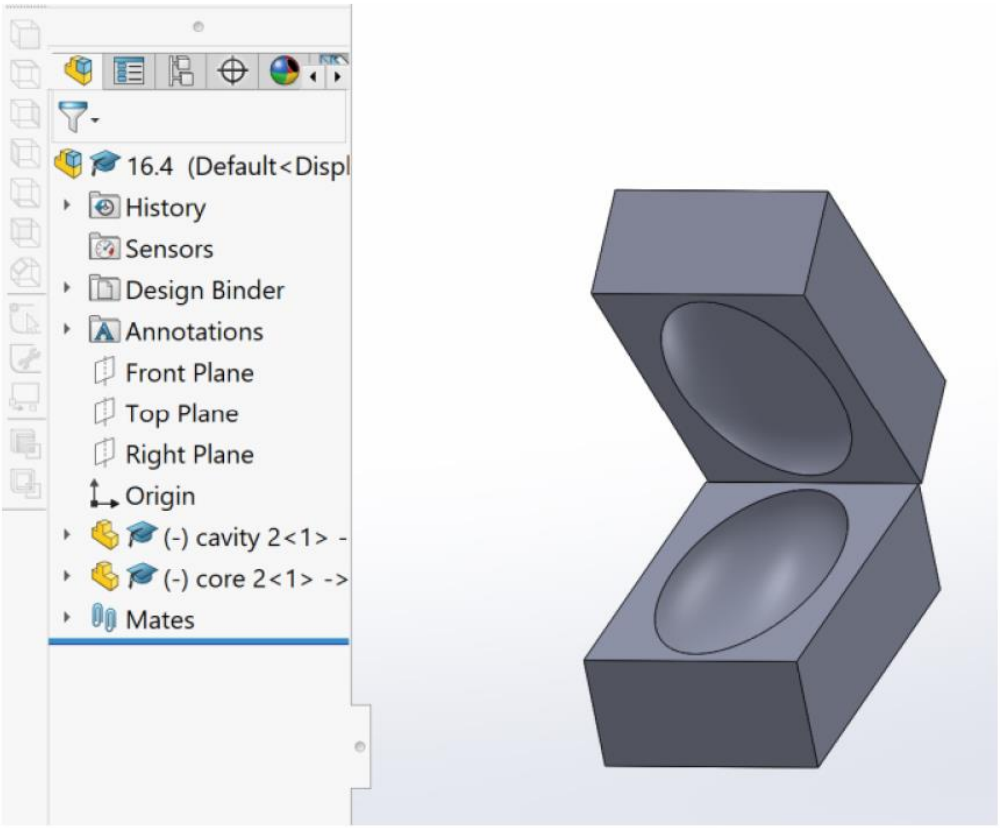
Part Design

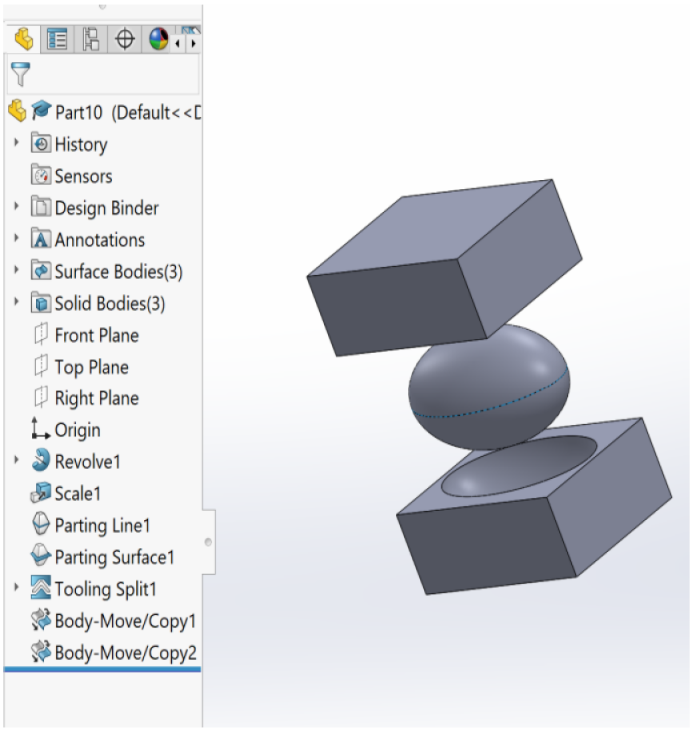

16.1 (Default<Display State-1>)
History
Sensors
Design Binder
Annotations
Front Plane
Top Plane
Right Plane
Origin
(-) Cavity<1> ->? (Default<<Def
(-) Core<1> ->? (Default<<Defa
Mates

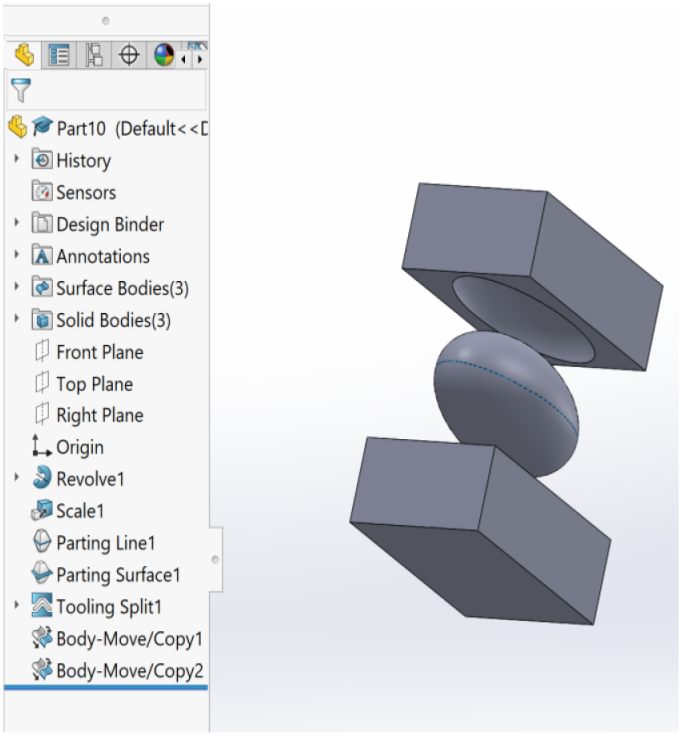

Part1 (Default<<Default>_Displa
History
Sensors
Design Binder
Annotations
Surface Bodies(3)
Solid Bodies(5)
Front Plane
Top Plane
Right Plane
Origin
Boss-Extrude1
Scale1
Parting Line1
Parting Surface1
Tooling Split1
Body-Move/Copy1
Body-Move/Copy2

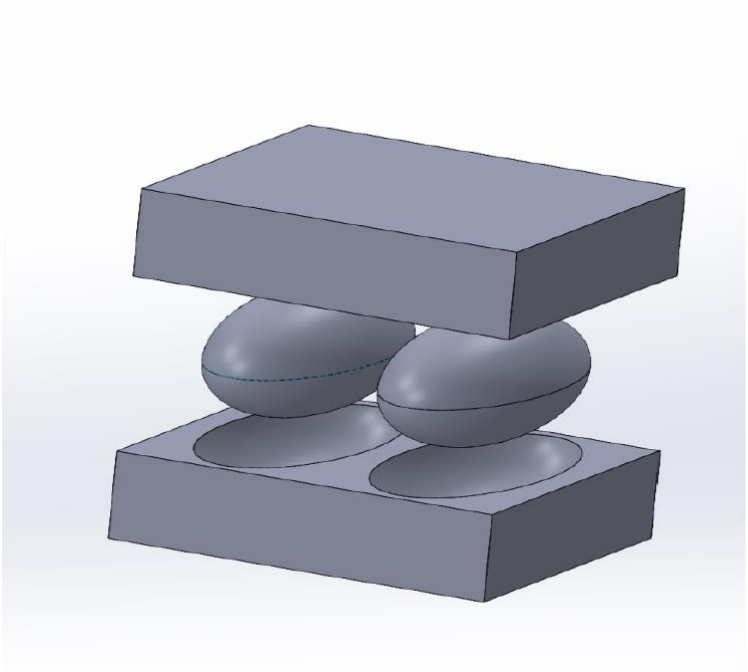

16.1 _ handson (De
History
Sensors
Design Binder
Annotations
Front Plane
Top Plane
Right Plane
Origin
(-) Cavity 1<1> -
(-) peg<1> ->? (
Mates


Part6 (Default<<De
History
Sensors
Design Binder
Annotations
Surface Bodies(3)
Solid Bodies(5)
Front Plane
Top Plane
Right Plane
Origin
Boss-Extrude1
Parting Line1
Shut-Off Surface1
Parting Surface1
Tooling Split1
Body-Move/Copy1
Body-Move/Copy2

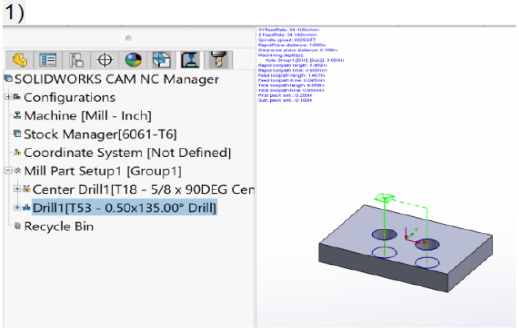

16.4 (Default<Displ
History
Sensors
Design Binder
Annotations
Front Plane
Top Plane
Right Plane
Origin
(-) cavity 2<1> -
(-) core 2<1> ->
Mates


Part10 (Default<<D
History
Sensors
Design Binder
Annotations
Surface Bodies(3)
Solid Bodies(3)
Front Plane
Top Plane
Right Plane
Origin
Revolve1
Scale1
Parting Line1
Parting Surface1
Tooling Split1
Body-Move/Copy1
Body-Move/Copy2

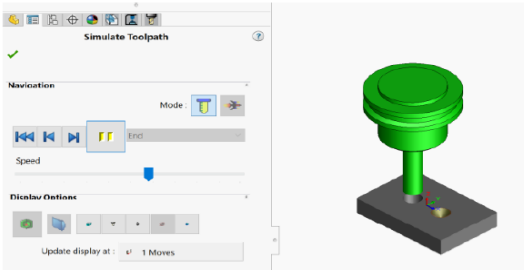

Part10 (Default<<D
History
Sensors
Design Binder
Annotations
Surface Bodies(3)
Solid Bodies(3)
Front Plane
Top Plane
Right Plane
Origin
Revolve1
Scale1
Parting Line1
Parting Surface1
Tooling Split1
Body-Move/Copy1
Body-Move/Copy2



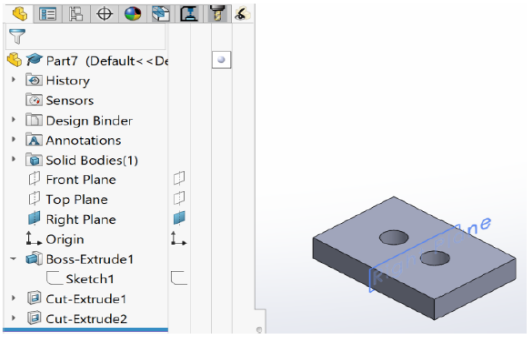
1)


SOLIDWORKS CAM NC Manager
Configurations
Machine [Mill - Inch]
Stock Manager[6061-T6]
Coordinate System [Not Defined]
Mill Part Setup1 [Group1]
Center Drill1[T18 - 5/8 x 90DEG Cen
Drill1[T53 - 0.50x135.00° Drill]
Recycle Bin

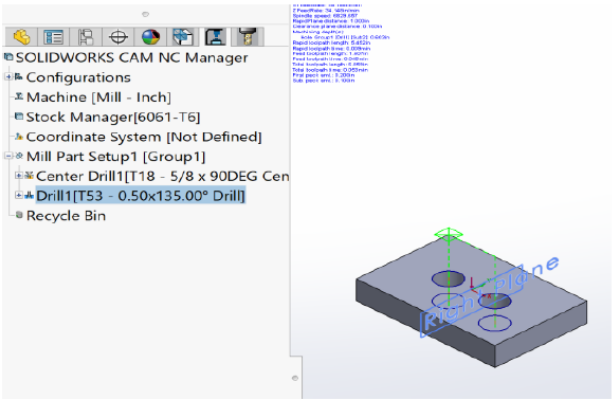
2)


Simulate Toolpath
Navigation
Mode :
End
Speed
Display Options
Update display at :
1 Moves

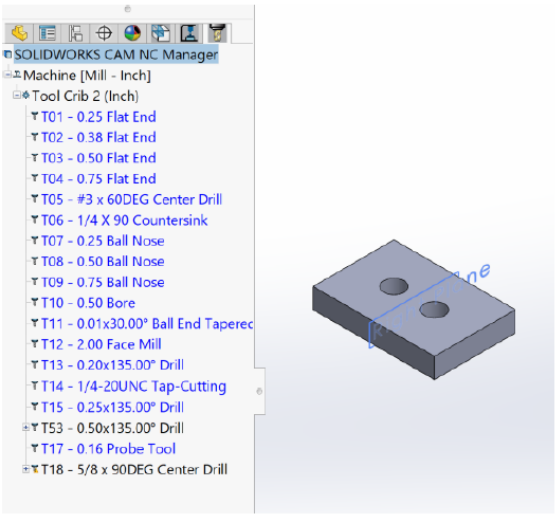
3)

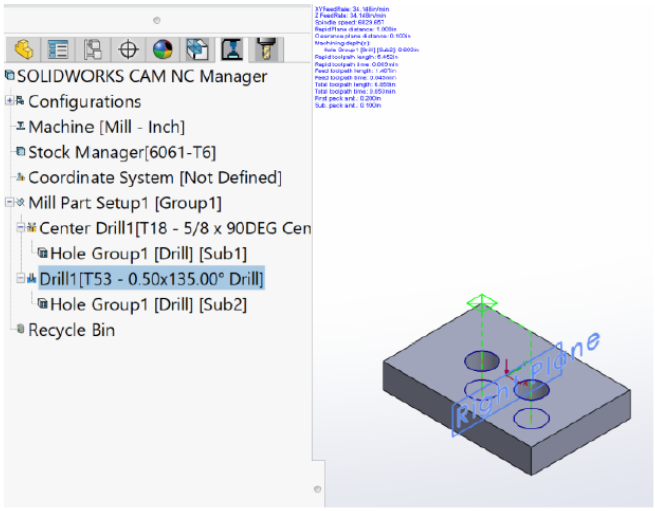

Part7 (Default<<De
History
Sensors
Design Binder
Annotations
Solid Bodies(1)
Front Plane
Top Plane
Right Plane
Origin
Boss-Extrude1
Sketch1
Cut-Extrude1
Cut-Extrude2

4)



5)



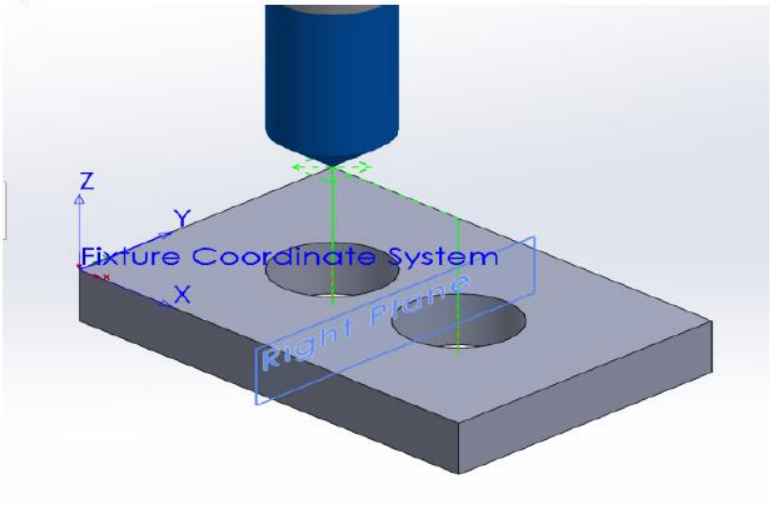


6)

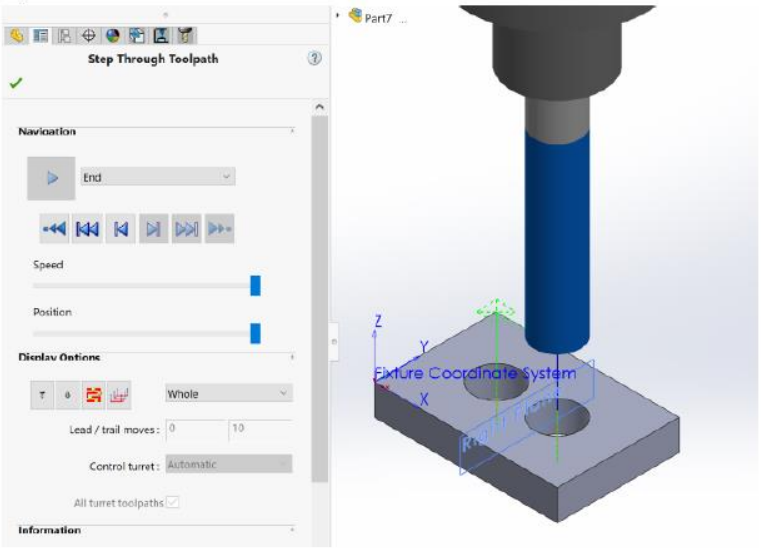
```
O0001
N1 G20
N2 (5/8 X 90DEG CBT SPOT DRILL)
N3 G91 G28 X0 Y0 Z0
N4 T18 M06
N5 S5000 M03

N6 ( Center Drill1 )
N7 G90 G54 G00 X-.5 Y0
N8 G43 Z1. H18 M08
N9 G82 G98 R.1 Z-.225 P1000 F2.5
N10 X.5
N11 G80 Z1. M09
N12 G91 G28 Z0
N13 (1/2 SCREW MACH DRILL)
N14 T16 M06
N15 S6829 M03

N16 ( Drill1 )
N17 G90 G54 G00 X-.5 Y0
N18 G43 Z1. H16 M08
N19 G83 G98 R.1 Z-.6034 Q.1 F34.1483
N20 X.5
N21 G80 Z1. M09
N22 G91 G28 Z0
N23 G28 X0 Y0
N24 M30
```

```
O0001
N1 G20
N2 (5/8 X 90DEG CBT SPOT DRILL)
N3 G91 G28 X0 Y0 Z0
N4 T18 M06
N5 S5000 M03

N6 ( Center Drill1 )
N7 G90 G54 G00 X-.5 Y0
N8 G43 Z1. H18 M08
N9 G82 G98 R.1 Z-.225 P1000 F2.5
N10 X.5
N11 G80 Z1. M09
N12 G91 G28 Z0
N13 (1/2 SCREW MACH DRILL)
N14 T53 M06
N15 S6829 M03

N16 ( Drill1 )
N17 G90 G54 G00 X-.5 Y0
N18 G43 Z1. H53 M08
N19 G83 G98 R.1 Z-.6034 Q.1 F34.1483
N20 X.5
N21 G80 Z1. M09
N22 G91 G28 Z0
N23 G28 X0 Y0
N24 M30
```

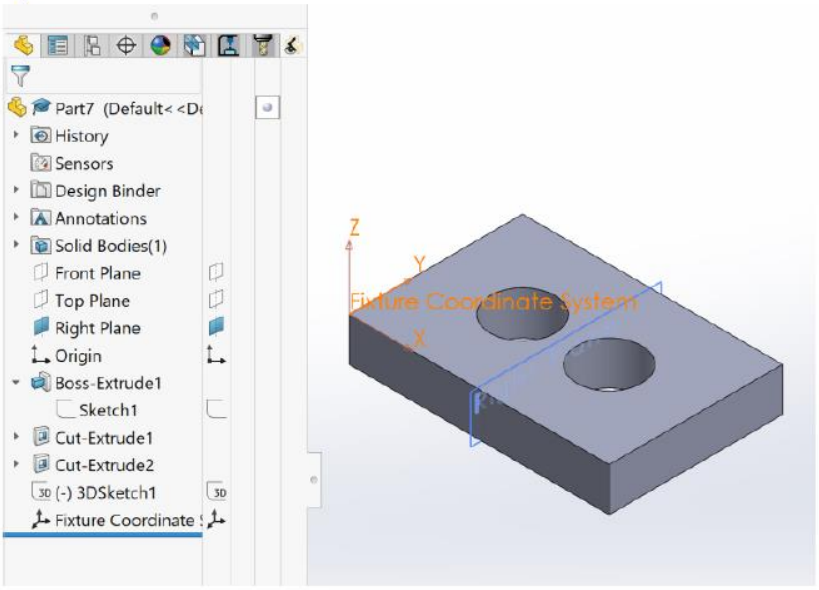
1)


Z
Y
X
Fixture Coordinate System
Right Plane

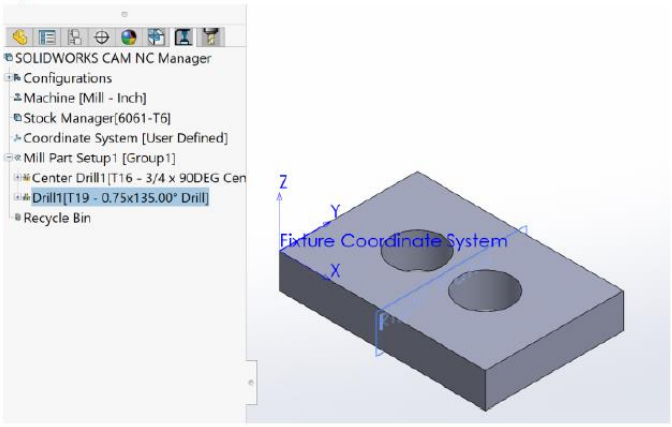
2)


Step Through Toolpath
Navigation
End
Speed
Position
Display Options
Whole
Lead / trail moves :
Control turret :
Automatic
All turret toolpaths
Information
Part7
Z
Y
X
Fixture Coordinate System

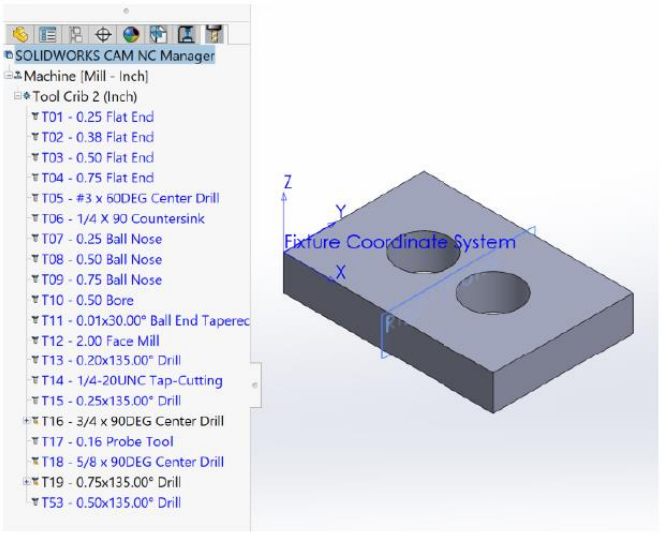
3)


Part7 (Default< <D
History
Sensors
Design Binder
Annotations
Solid Bodies(1)
Front Plane
Top Plane
Right Plane
Origin
Boss-Extrude1
Sketch1
Cut-Extrude1
Cut-Extrude2
(-) 3DSketch1
Fixture Coordinate
Z
Y
X
Fixture Coordinate System

4)



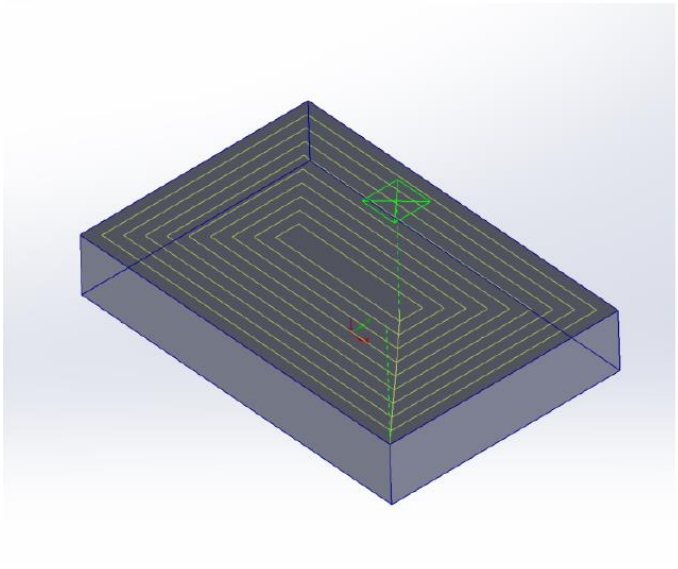
5)



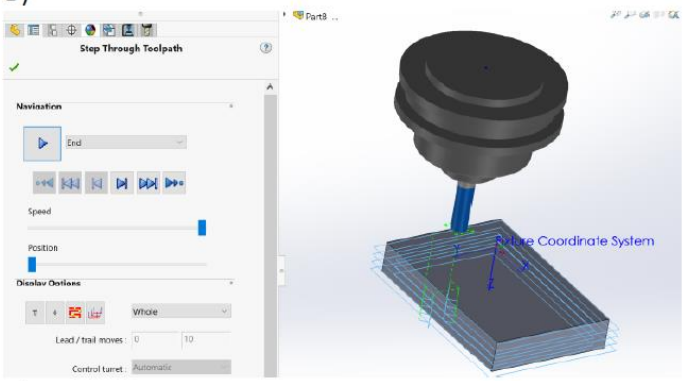
6)

```
O0001
N1 G20
N2 (3/4 X 90DEG CBT SPOT DRILL)
N3 G91 G28 X0 Y0 Z0
N4 T16 M06
N5 S4991 M03

N6 ( Center Drill1 )
N7 G90 G54 G00 X1. Y1.
N8 G43 Z1. H16 M08
N9 G82 G98 R.1 Z-.3375 P1000 F26.4528
N10 X2.
N11 G80 Z1. M09
N12 G91 G28 Z0
N13 (3/4 SCREW MACH DRILL)
N14 T19 M06
N15 S4991 M03

N16 ( Drill1 )
N17 G90 G54 G00 X1. Y1.
N18 G43 Z1. H19 M08
N19 G83 G98 R.1 Z-.6551 Q.1 F26.4528
N20 X2.
N21 G80 Z1. M09
N22 G91 G28 Z0
N23 G28 X0 Y0
N24 M30
```

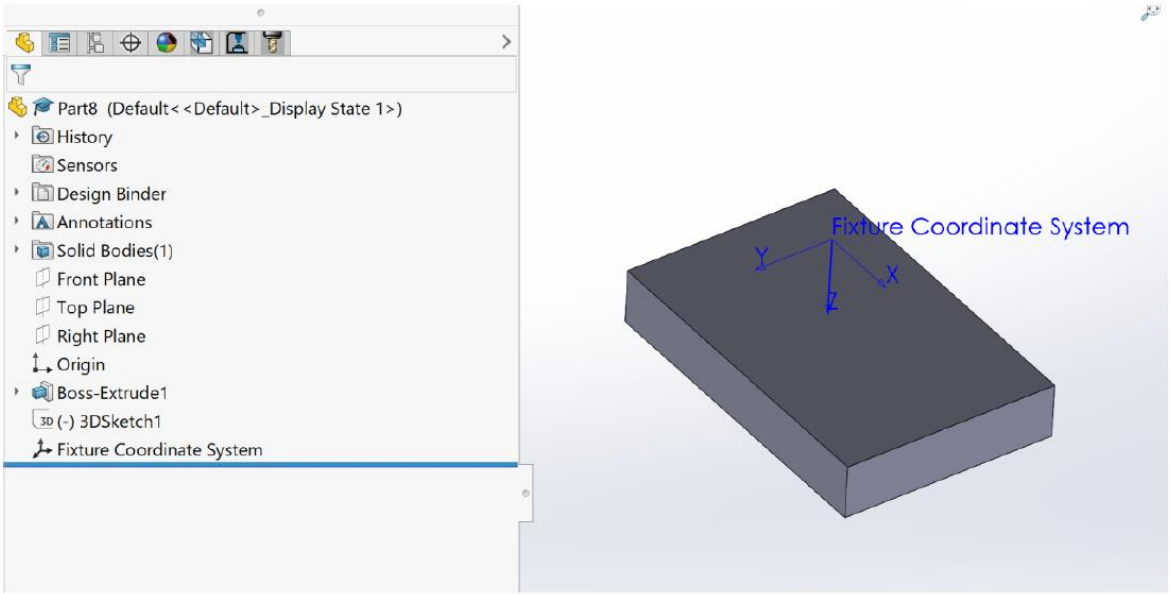
A)



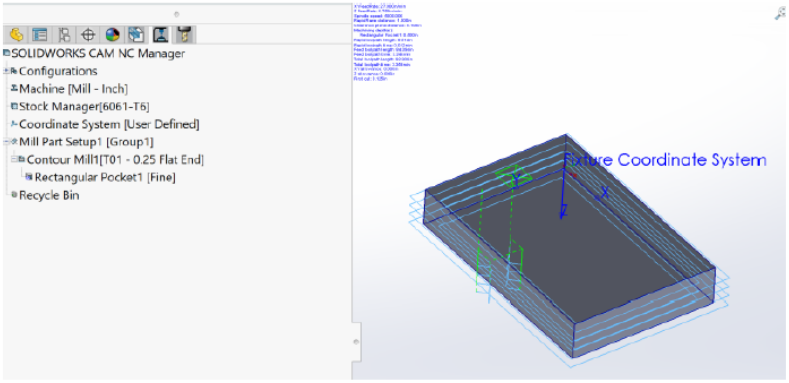
B)


Step Through Toolpath
Navigation
End
Speed
Position
Display Options
Whole
Lead / trail moves :
Control turret :
Automatic
Fixture Coordinate System

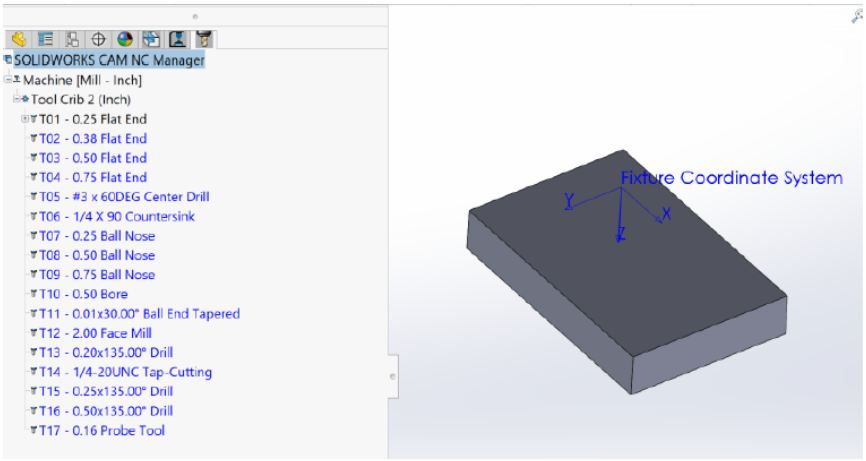
C)


Part8 (Default< <Default>_Display State 1>)
History
Sensors
Design Binder
Annotations
Solid Bodies(1)
Front Plane
Top Plane
Right Plane
Origin
Boss-Extrude1
(-) 3DSketch1
Fixture Coordinate System
Fixture Coordinate System
Y
X
Z

D)



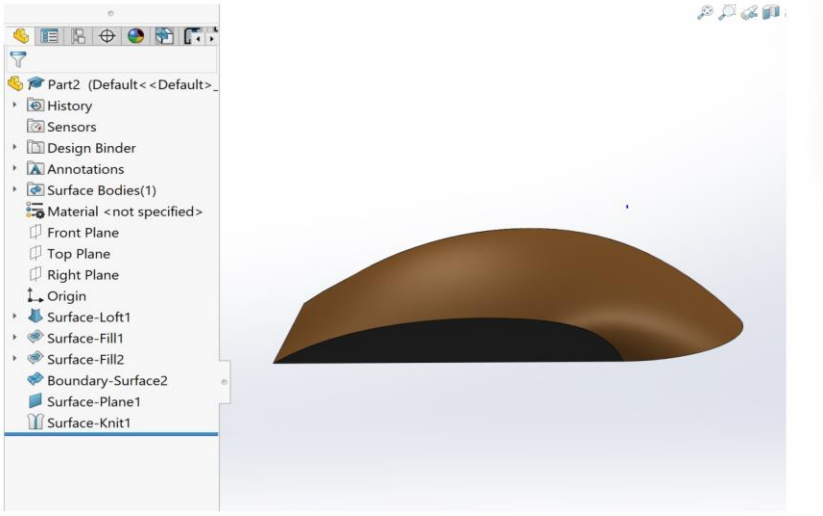
E)



F)

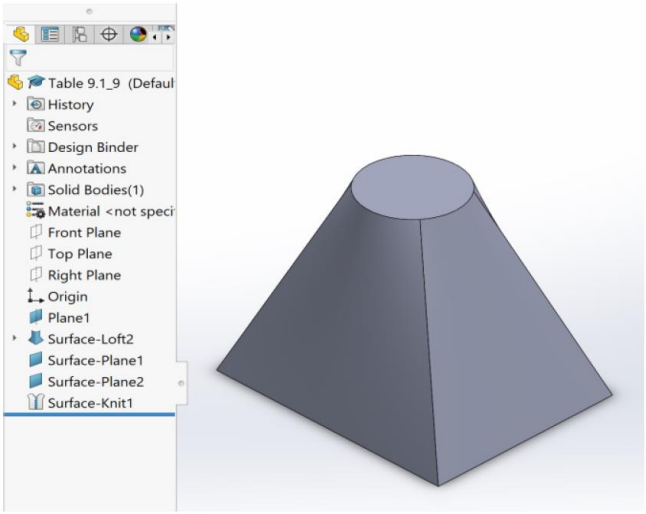
```
O0001
N1 G20
N2 (3/4 X 90DEG CBT SPOT DRILL)
N3 G91 G28 X0 Y0 Z0
N4 T16 M06
N5 S4991 M03

N6 ( Center Drill1 )
N7 G90 G54 G00 X1. Y1.
N8 G43 Z1. H16 M08
N9 G82 G98 R.1 Z-.3375 P1000 F26.4528
N10 X2.
N11 G80 Z1. M09
N12 G91 G28 Z0
N13 (3/4 SCREW MACH DRILL)
N14 T19 M06
N15 S4991 M03

N16 ( Drill1 )
N17 G90 G54 G00 X1. Y1.
N18 G43 Z1. H19 M08
N19 G83 G98 R.1 Z-.6551 Q.1 F26.4528
N20 X2.
N21 G80 Z1. M09
N22 G91 G28 Z0
N23 G28 X0 Y0
N24 M30
```

Mouse

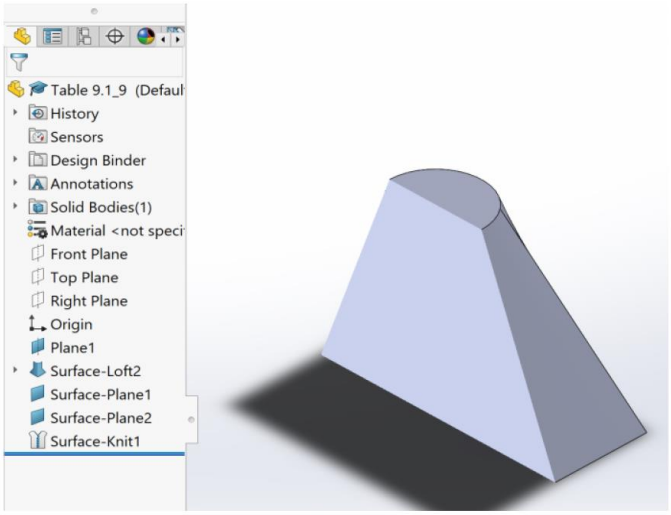


6. A) Convert a surface to a solid.

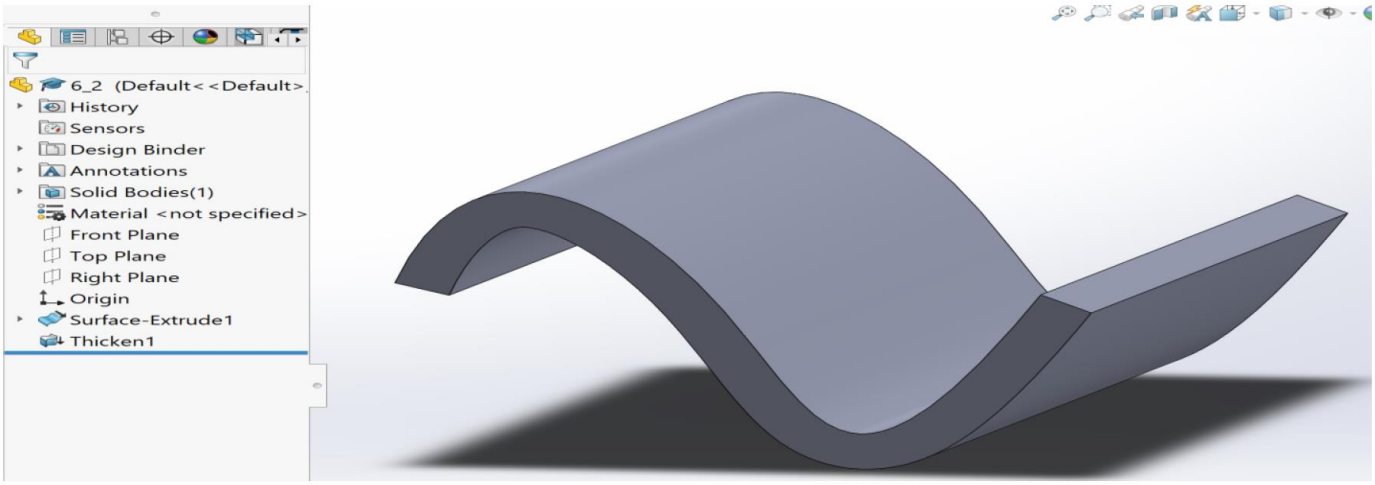
<u>Solid body – knit surface</u>



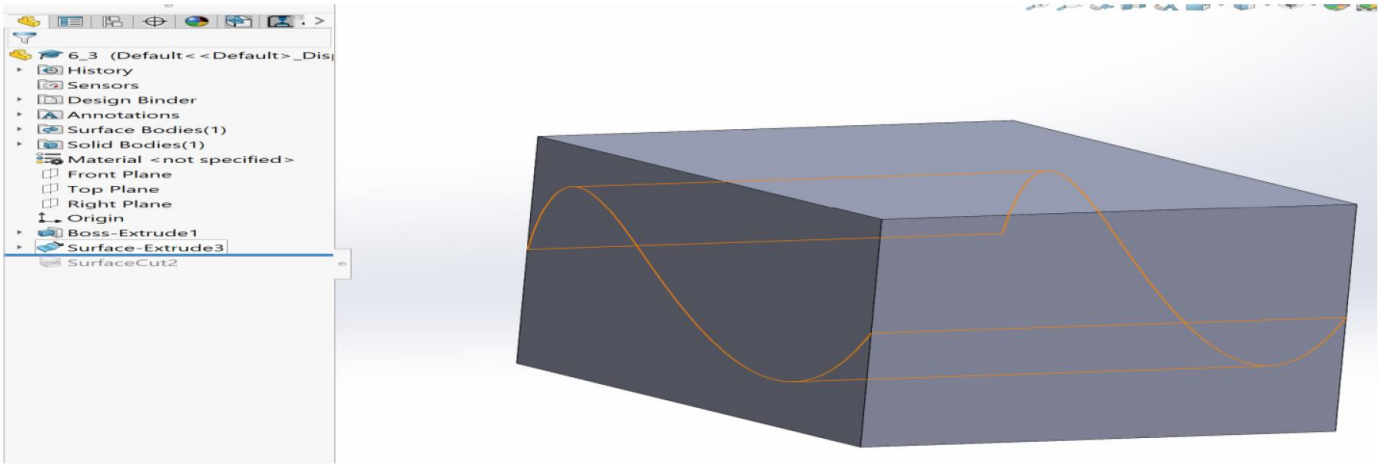
<u>showing solid being cut</u>



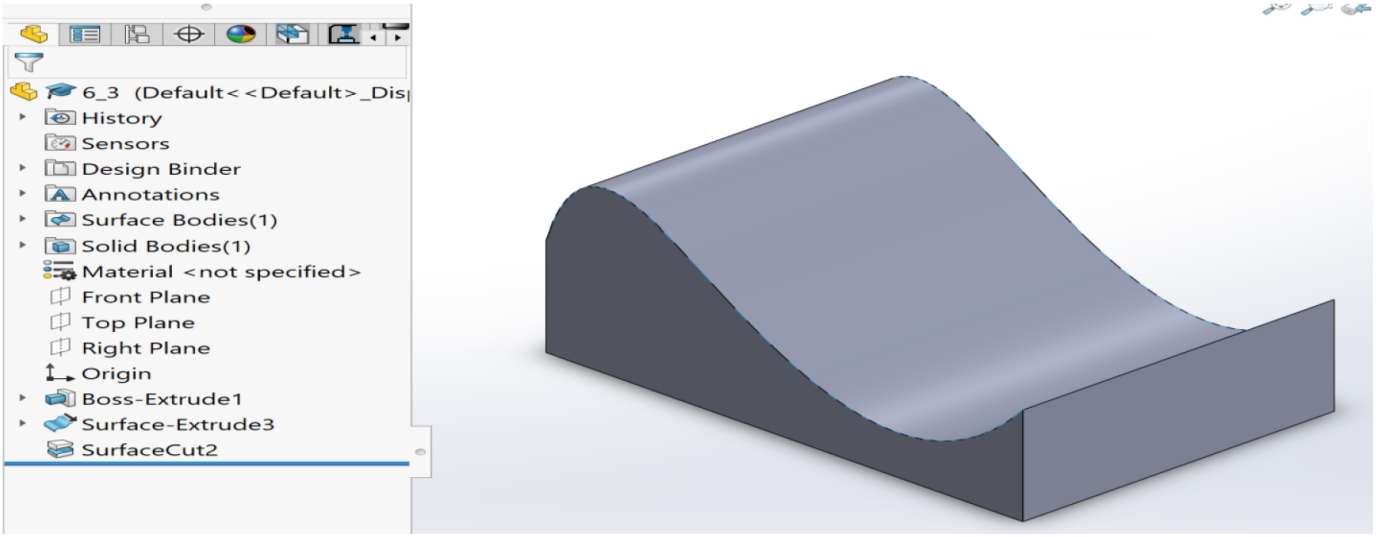
B) Thicken a surface.



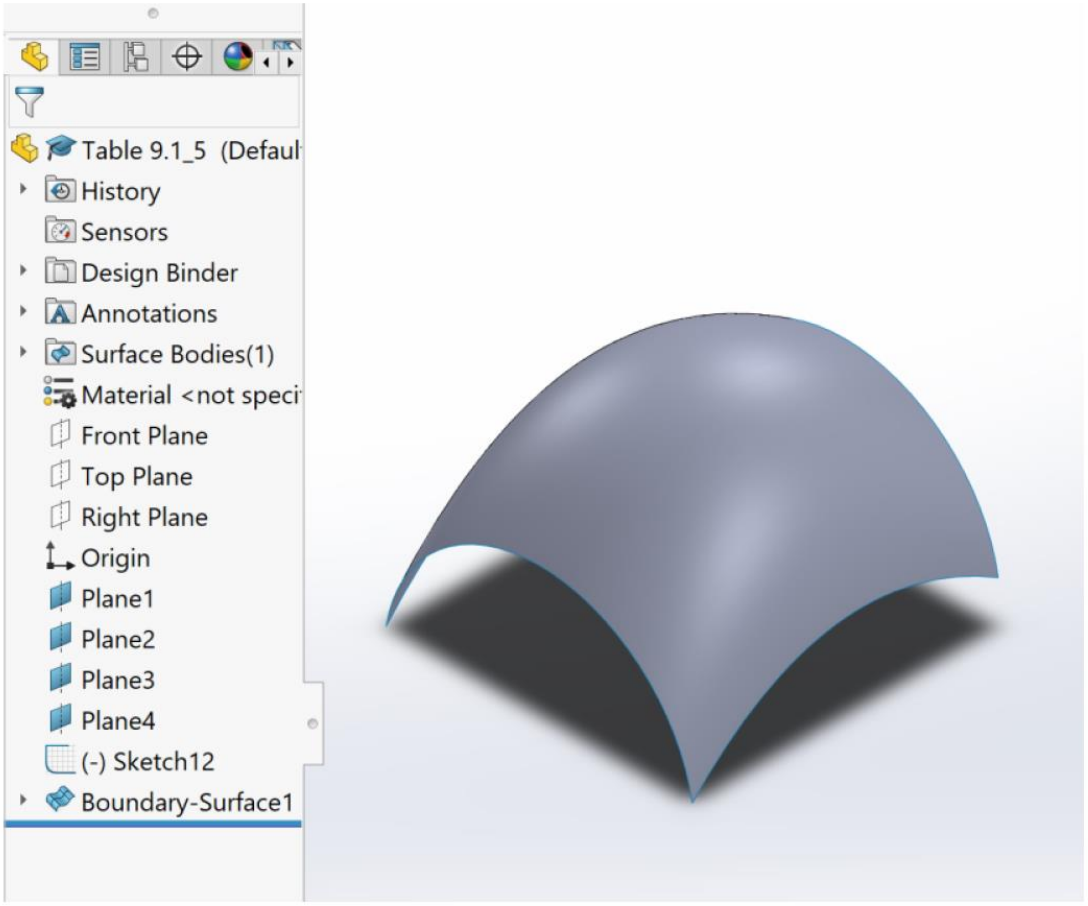
Before



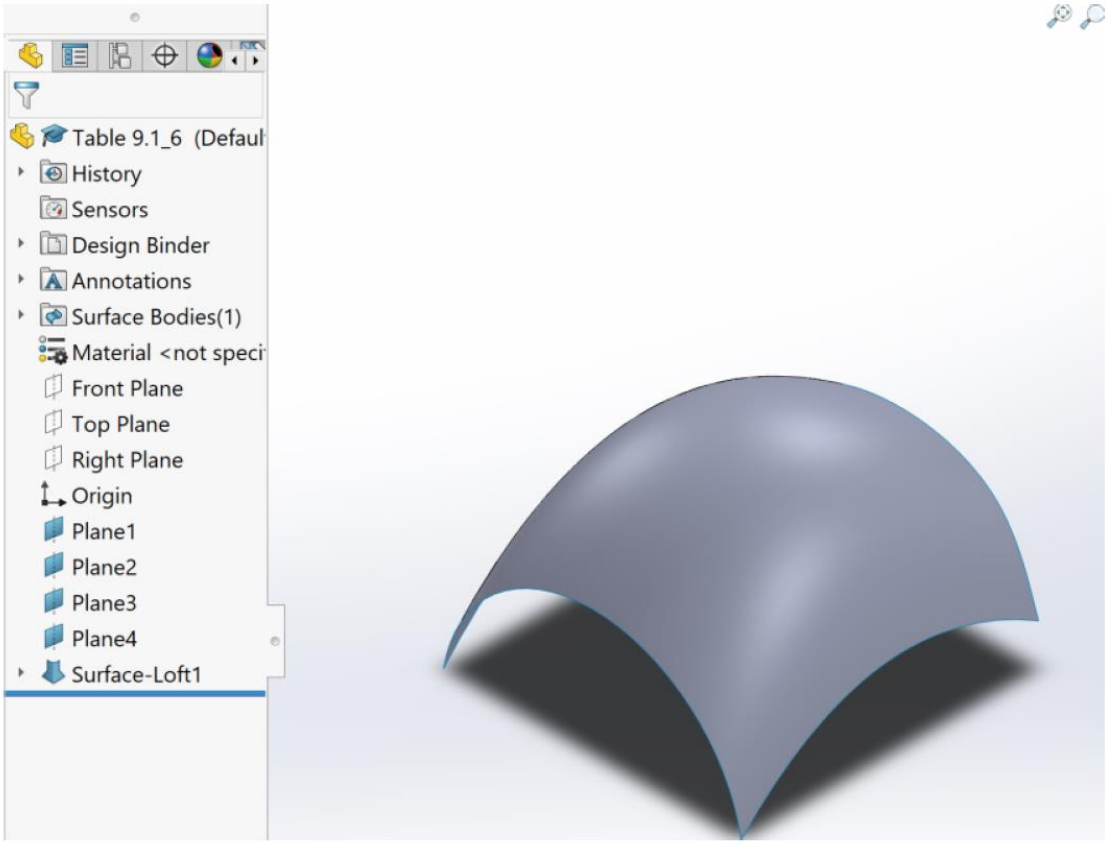
After



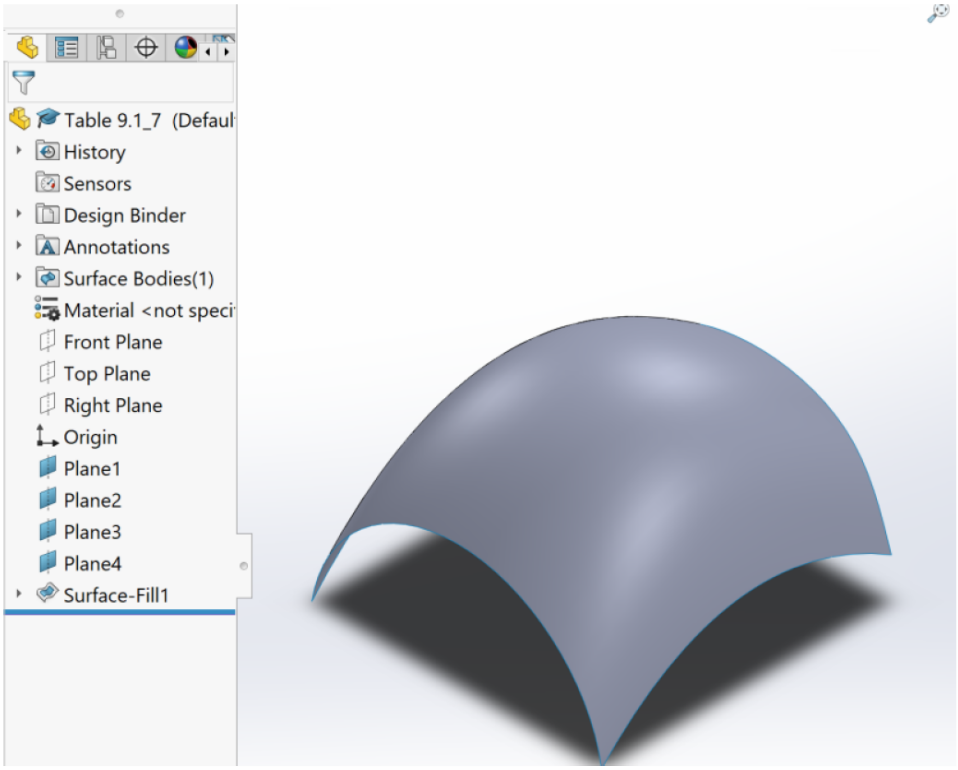
i) Boundary surface



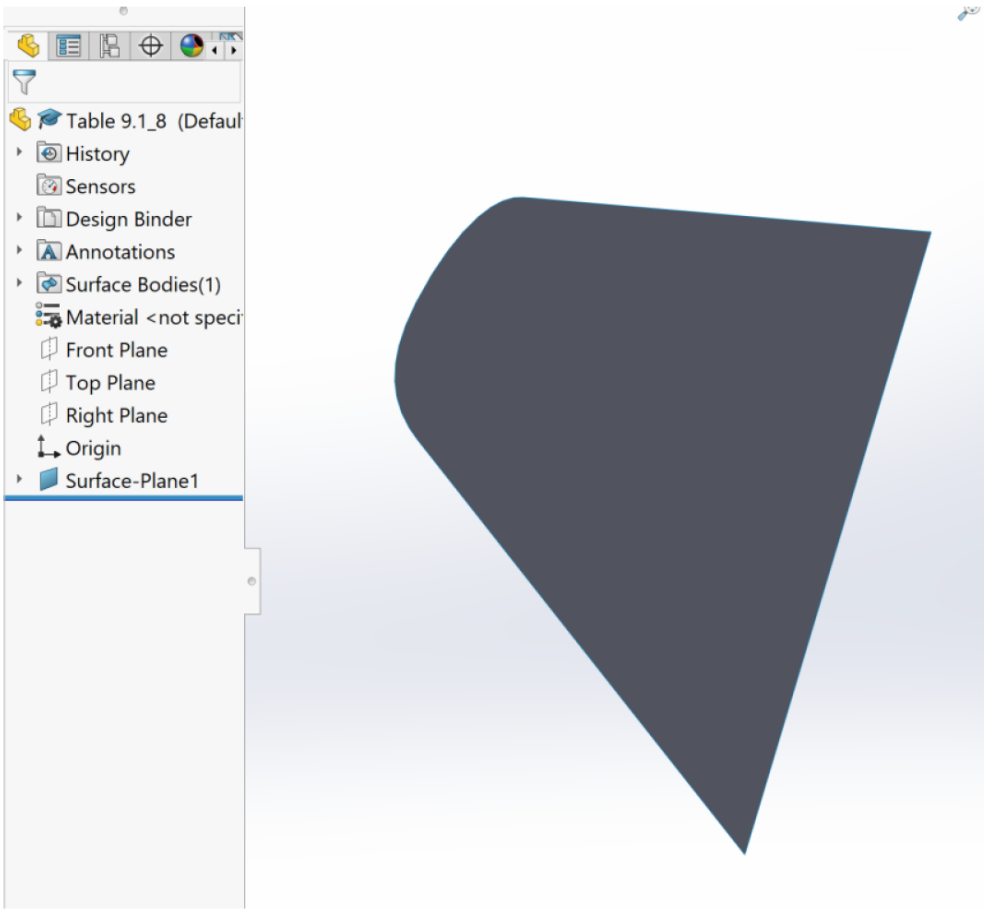
ii) Loft surface



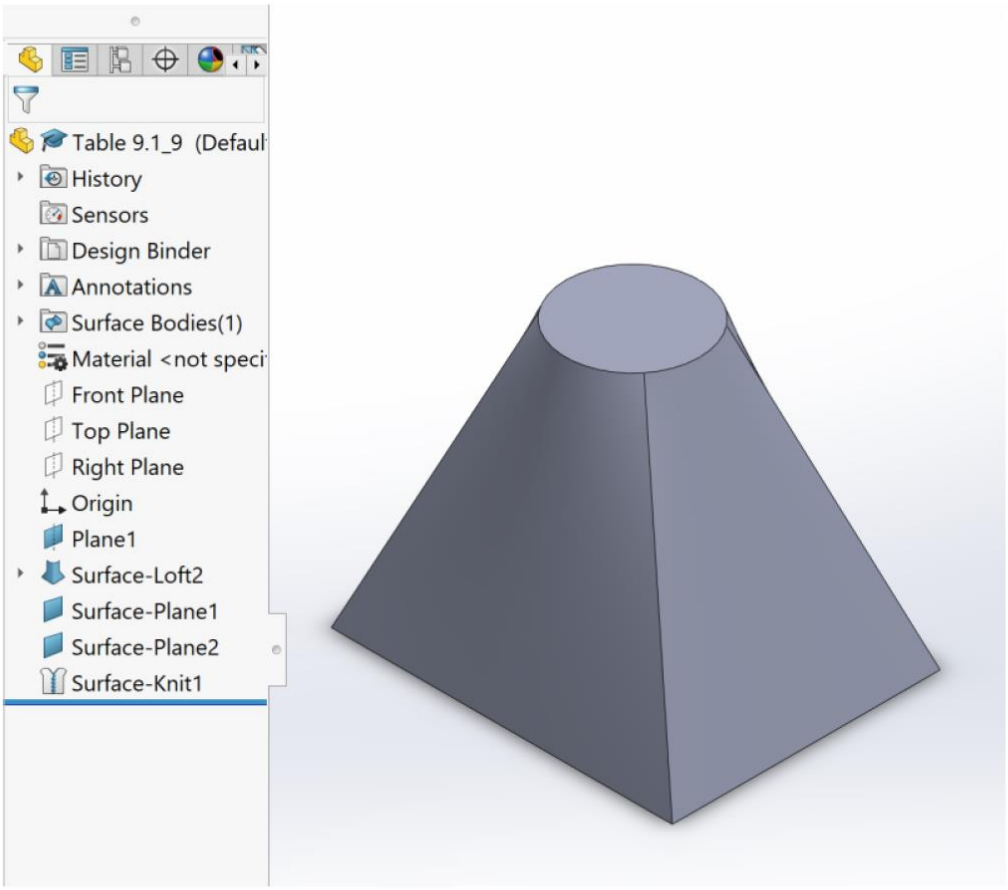
iii) Filled surface



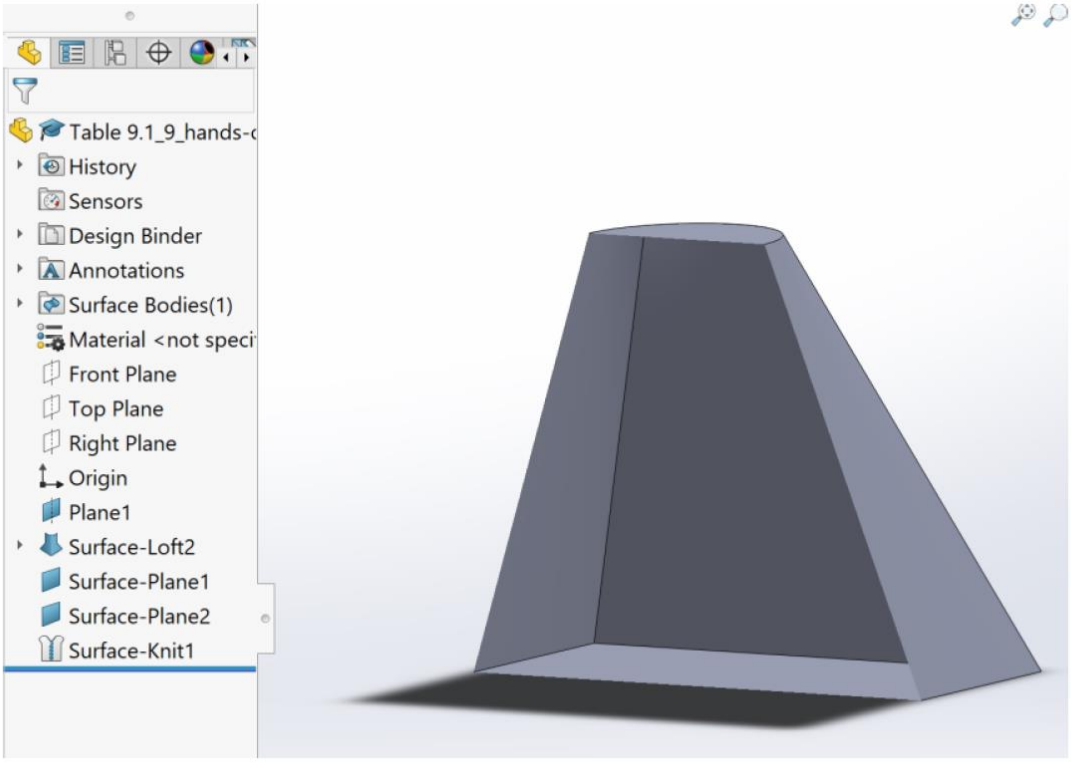
iv) Planar surface



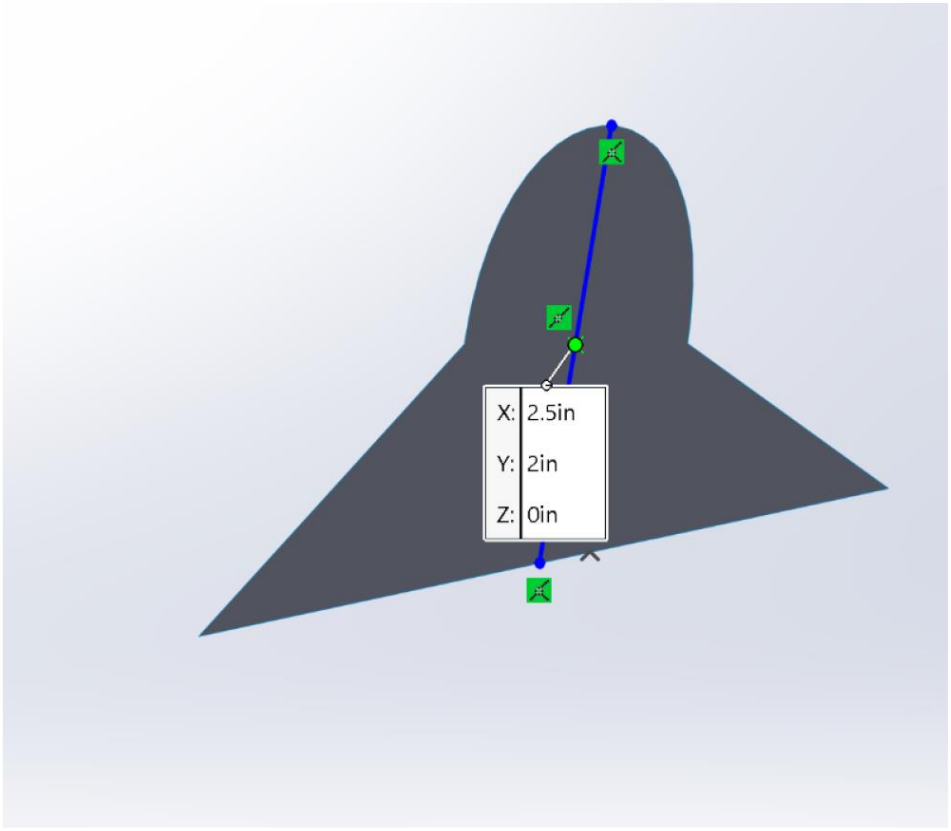
v) Knit surface



vi) Inside shown by cutting



The Midpoints are : (x,y,z) = (2.5,2,0)



Example 9.4 Hans-on. Submit a screenshot showing the sweep.