Quiz Quiz Quiz !

Q1. What is the correct file name extension for 3D printing?

. jpg

. stl

. f3d

Quiz Quiz Quiz !

Q2. You should do *this* to make the printer horizontal.
What is *this*?

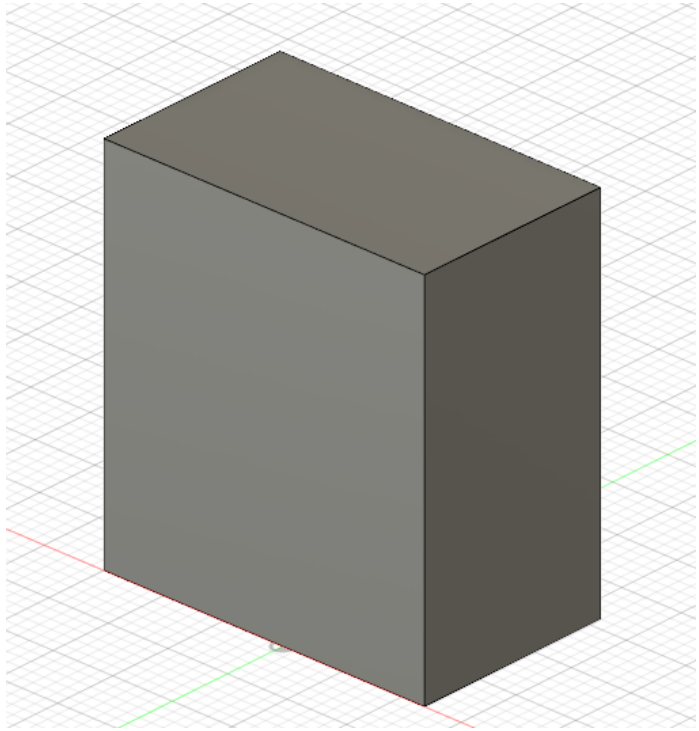
Leveling

Autohome

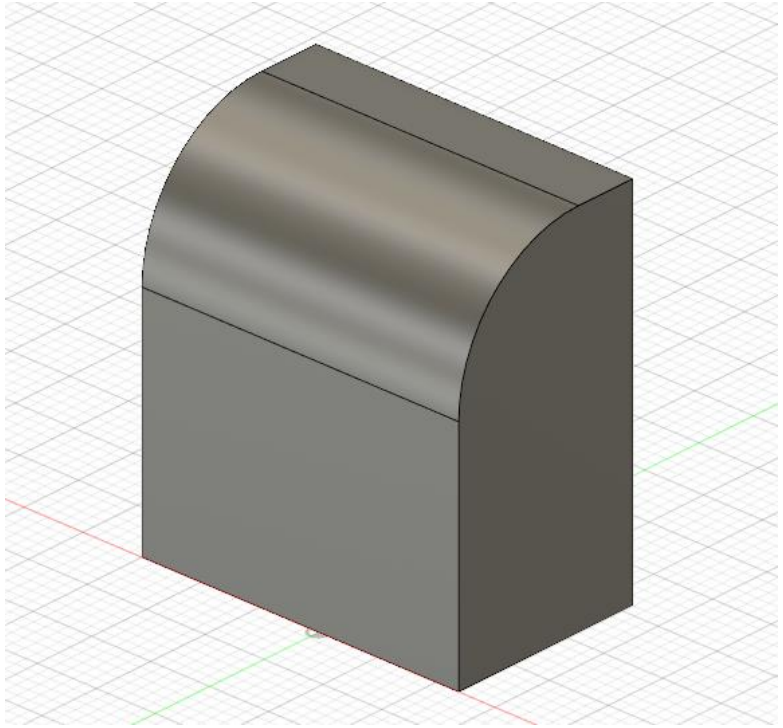
Loading

Quiz Quiz Quiz !

Q3. Which tool is used for this change?

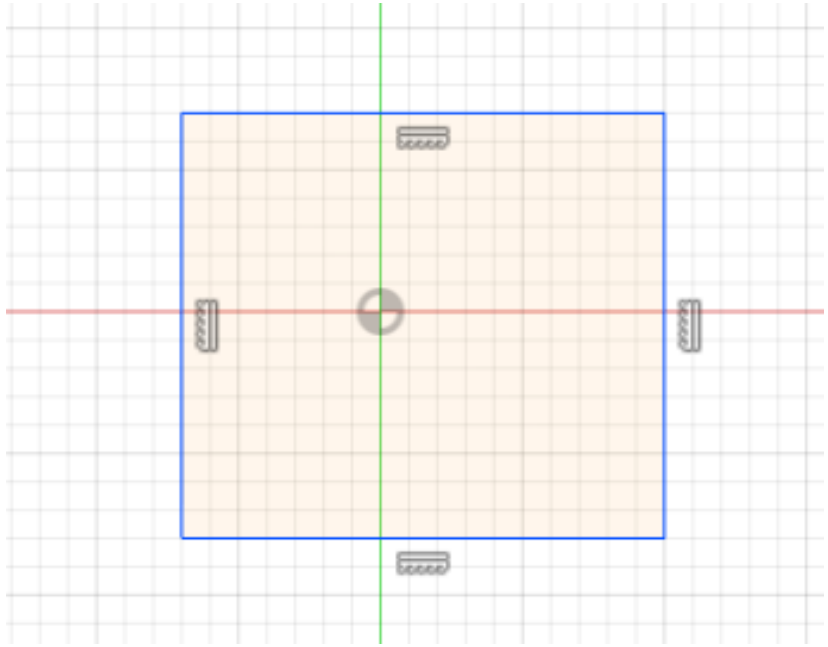


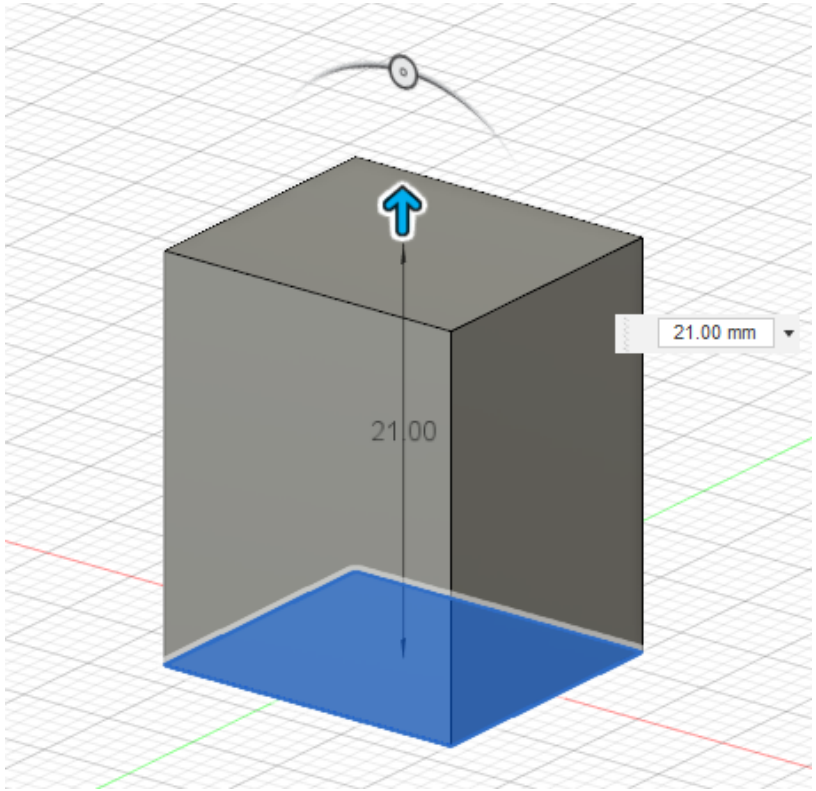
→



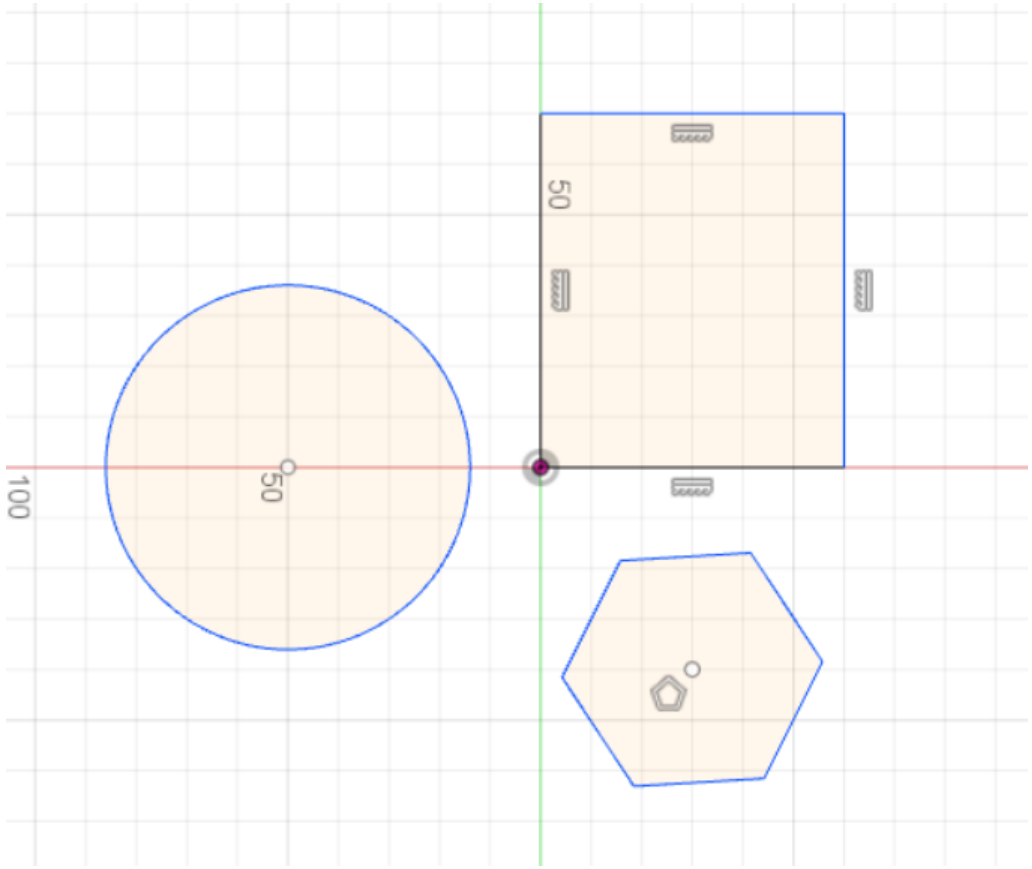
Quiz Quiz Quiz !

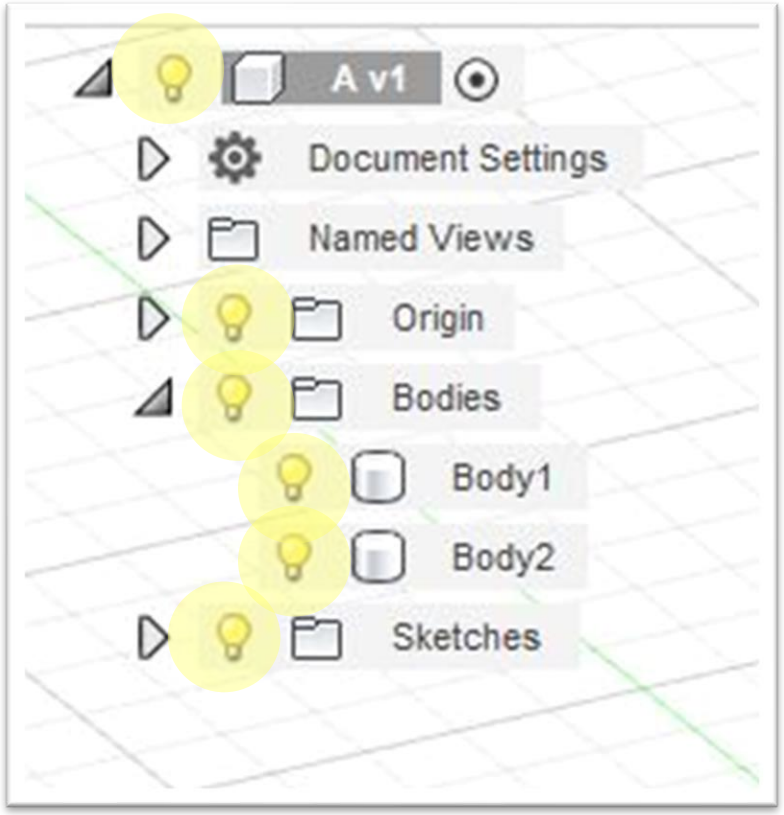
Q4. Which tool is used for this change?



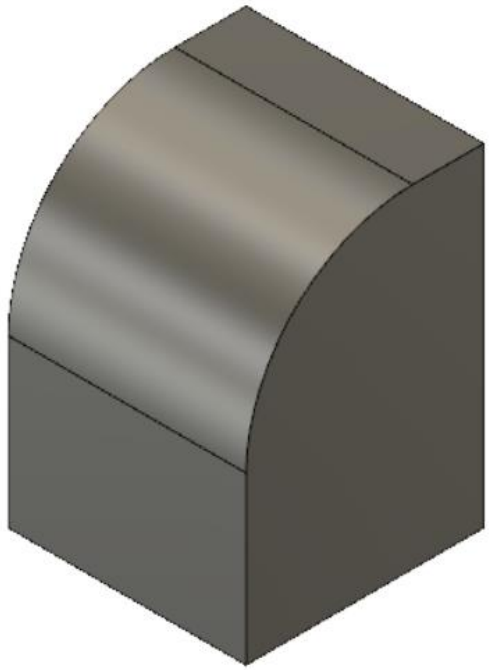


Review

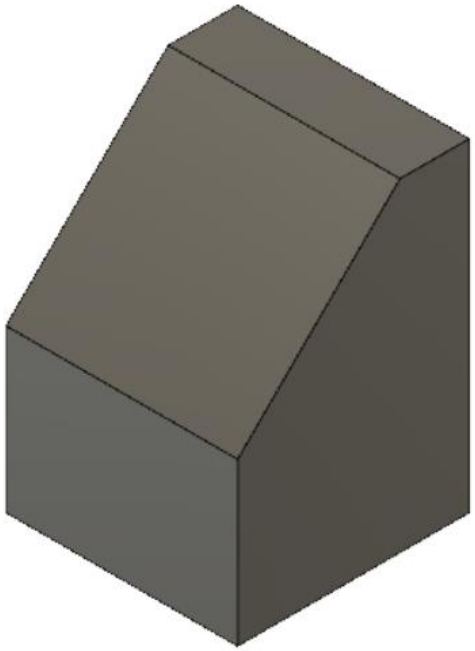

50
50
100


A v1
Document Settings
Named Views
Origin
Bodies
Body1
Body2
Sketches

Review



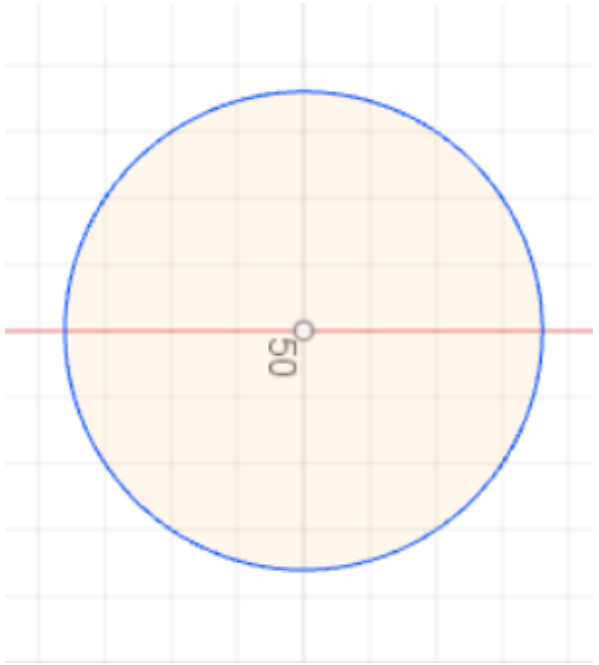
Fillet [F]

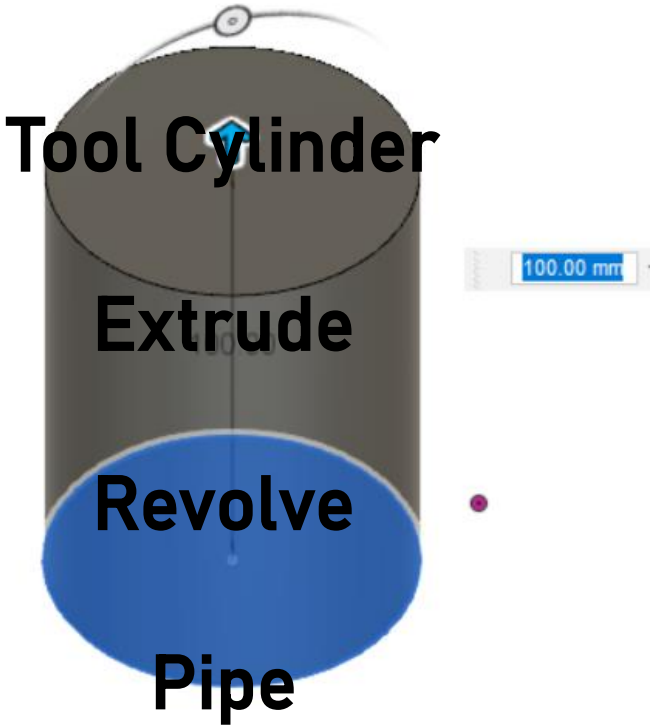


Chamfer

Review

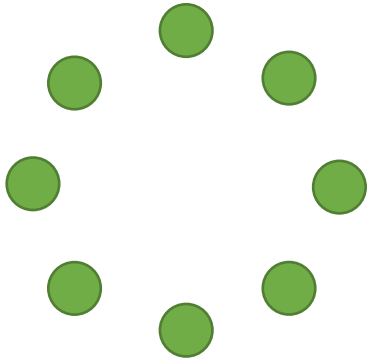
< The Ways of Building Cylinder >



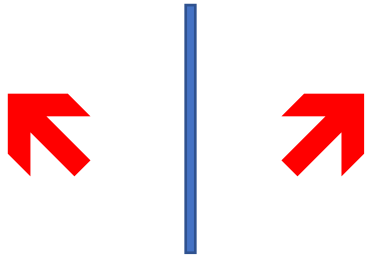


Review

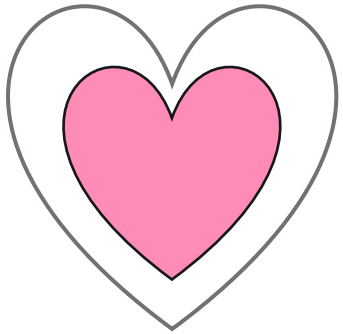
pattern



mirror



offset



< The Ways of Building Cylinder >

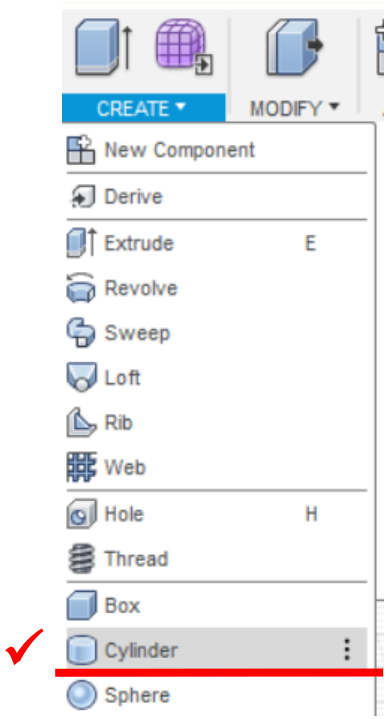
Tool Cylinder

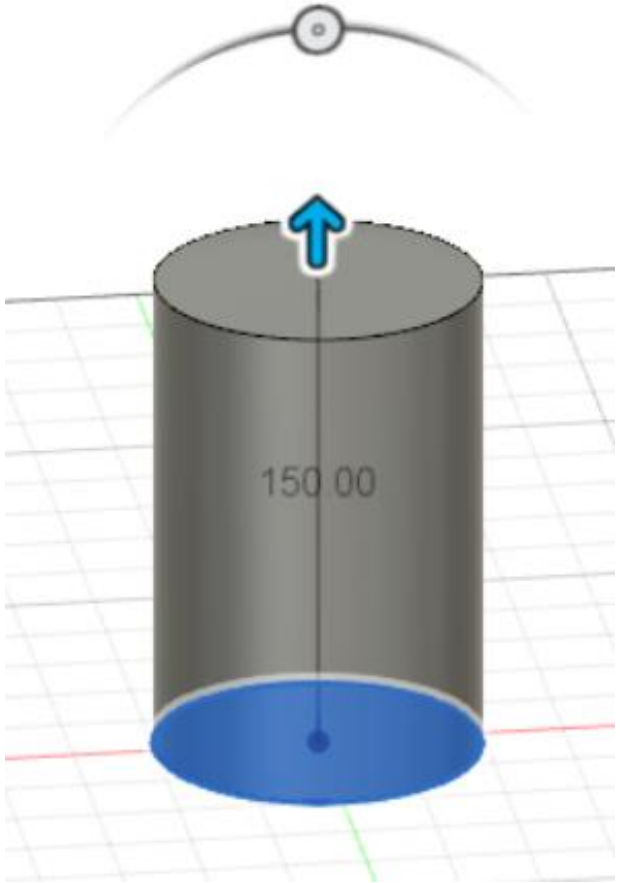
Extrude

Revolve

Pipe

Review





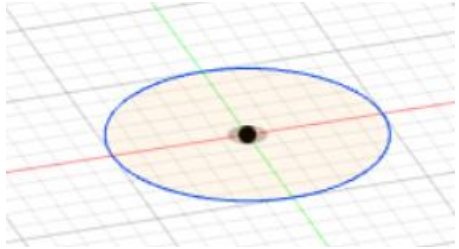
1. Tool Cylinder

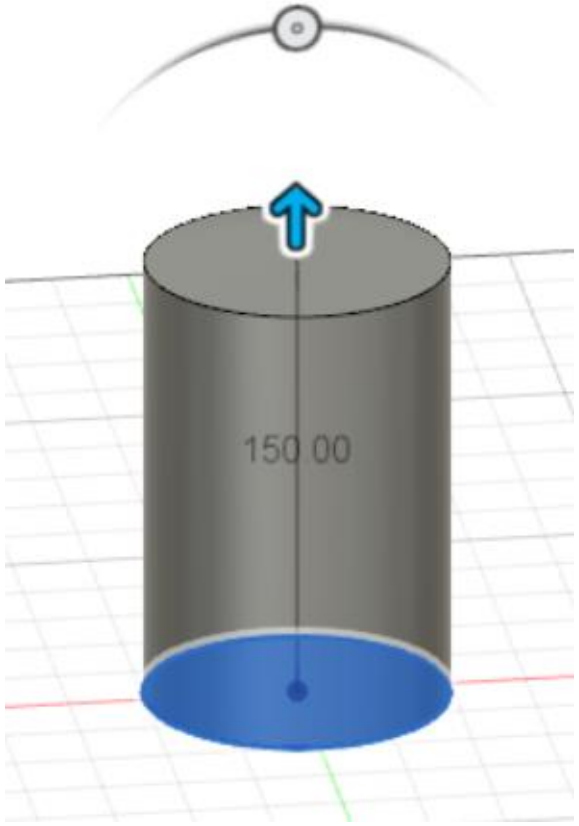
[Create] → Cylinder

The Ways of Building Cylinder

Review

Sketch Circle





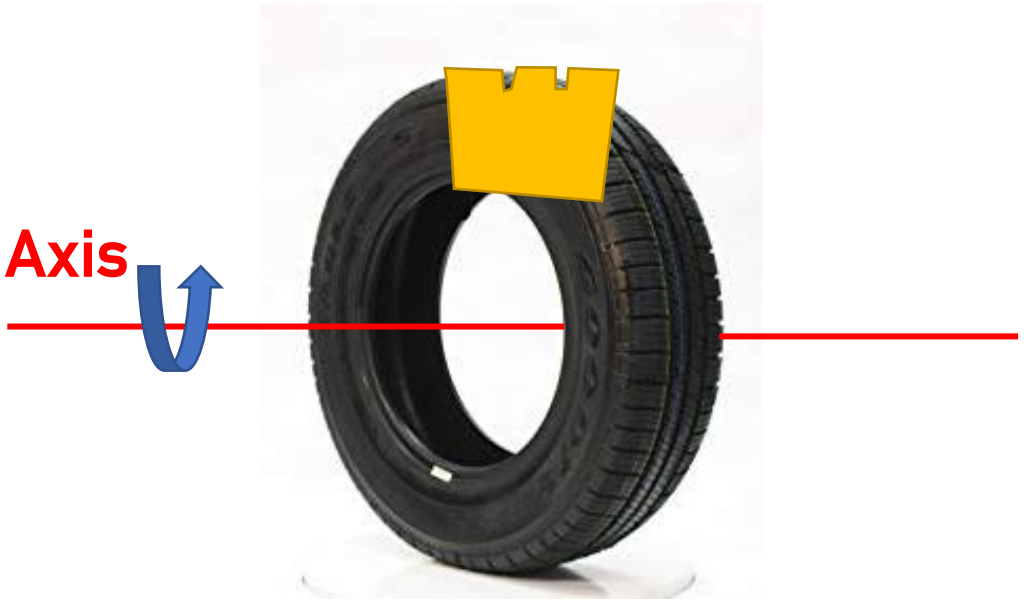
2. Extrude

[Sketch] → Circle

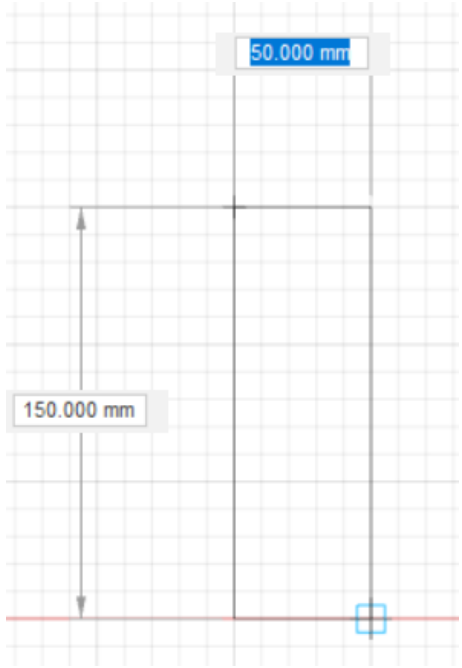
[Create] → Extrude

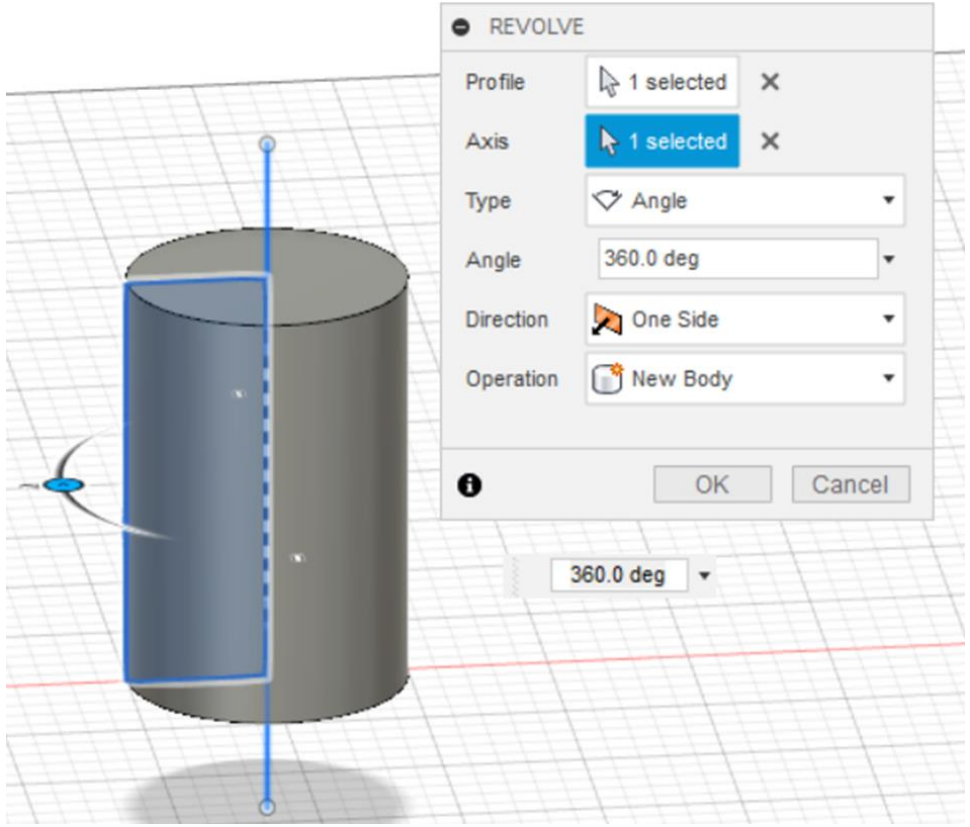
Revolve

3. Revolve



Revolve





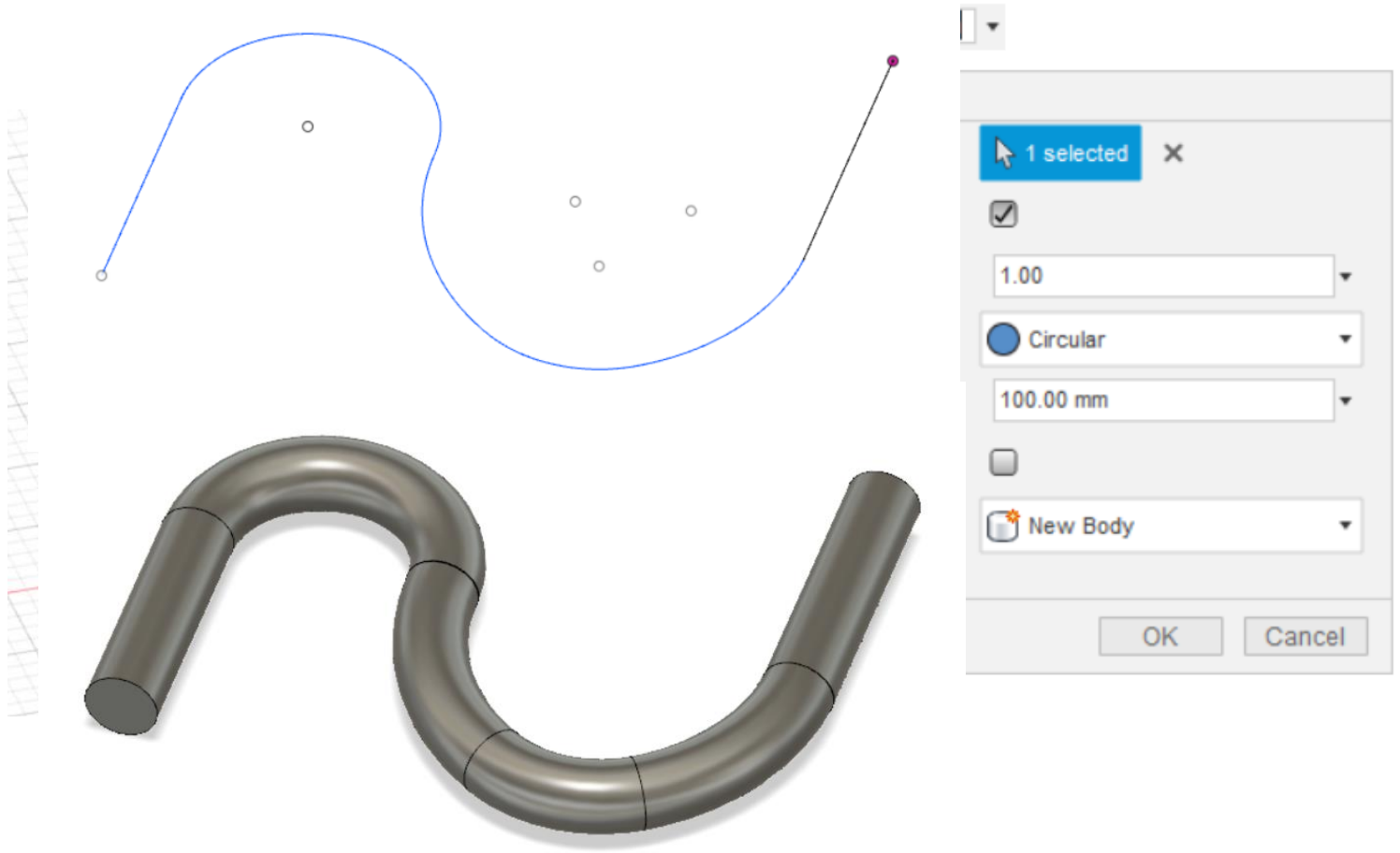
3. Revolve

[Sketch] → Rectangle

[Sketch] → Line

[Create] → Revolve

Pipe

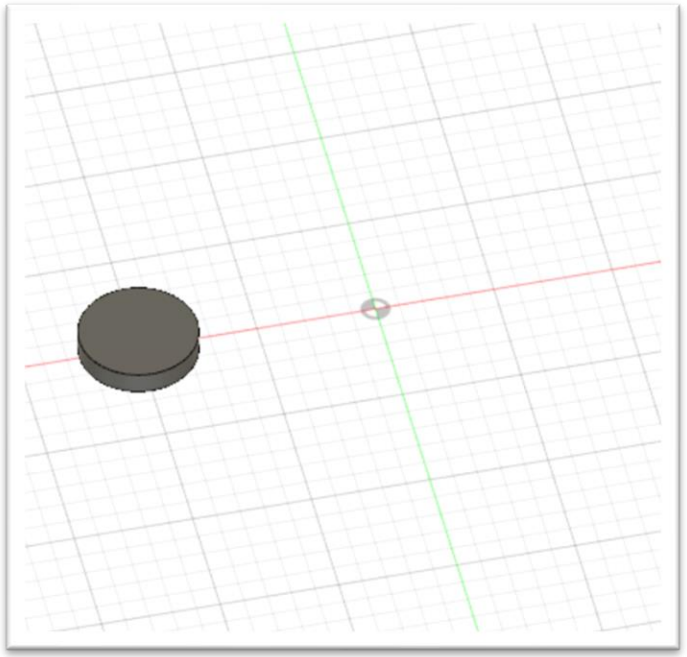


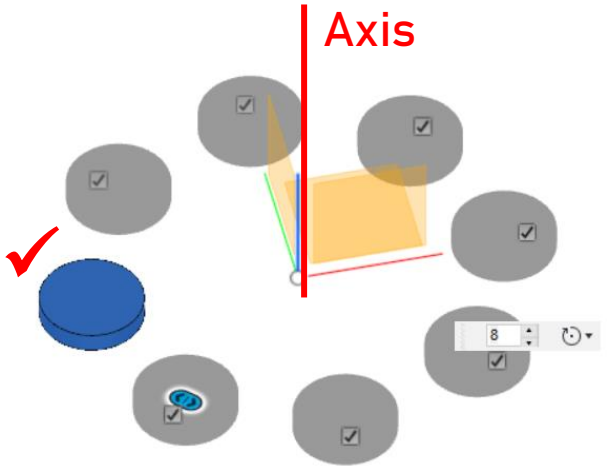
4. Pipe

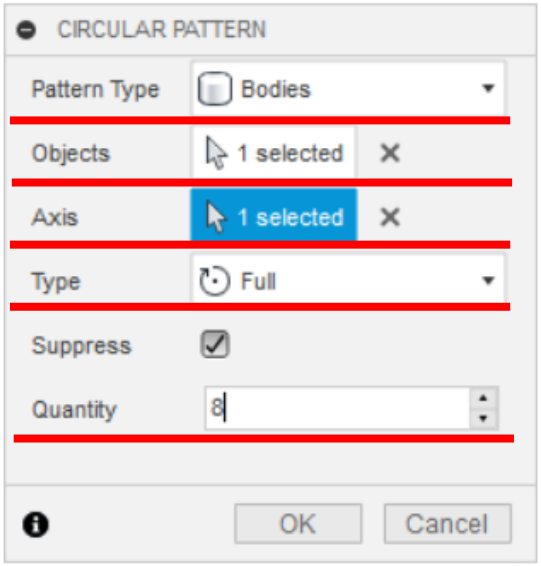
[Sketch] → Line

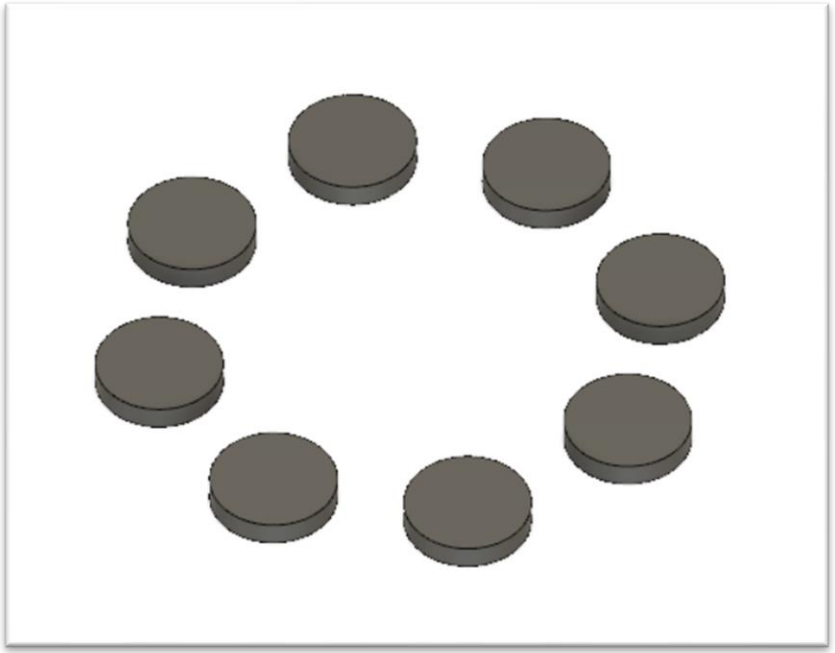
[Create] → Pipe

Pattern

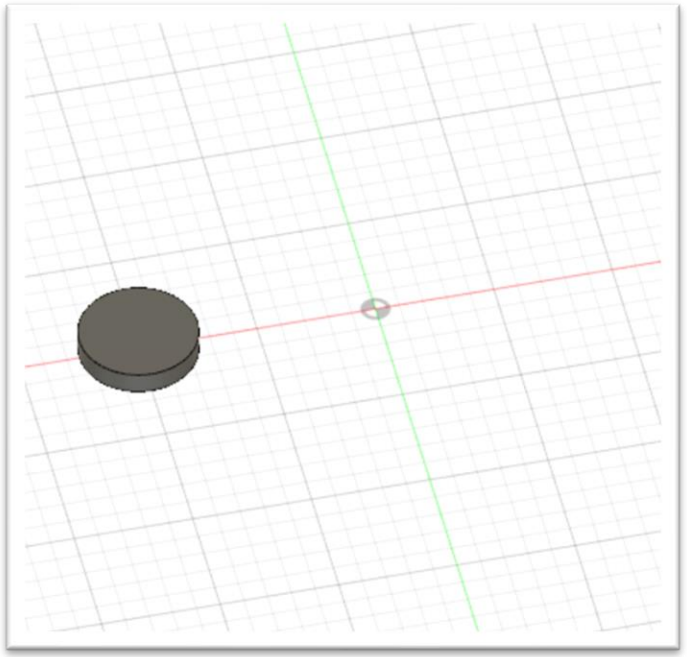


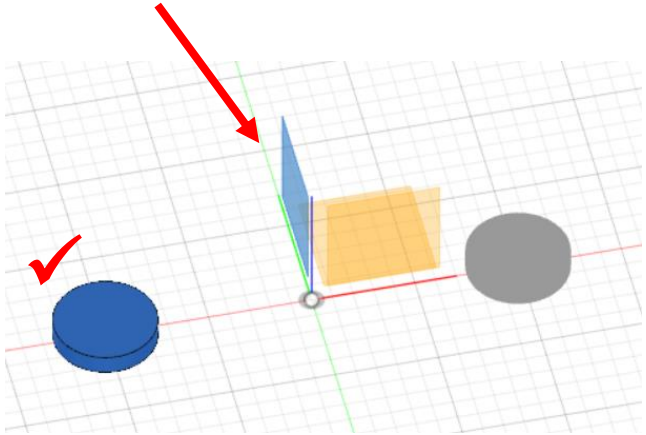

Axis
8

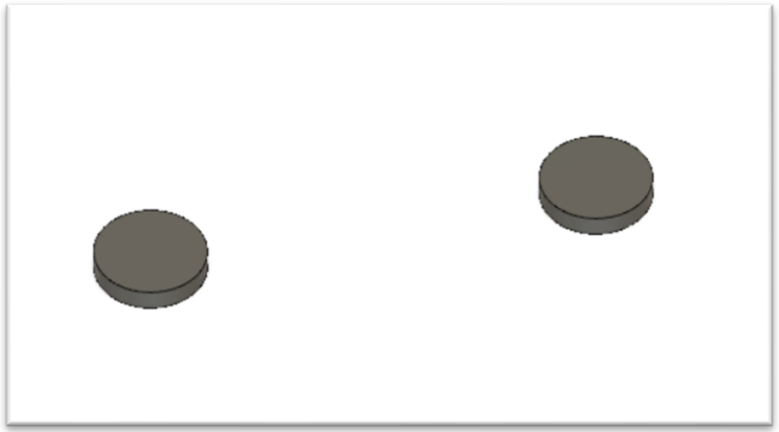

CIRCULAR PATTERN
Pattern Type
Bodies
Objects
1 selected
Axis
1 selected
Type
Full
Suppress
Quantity
8
OK
Cancel

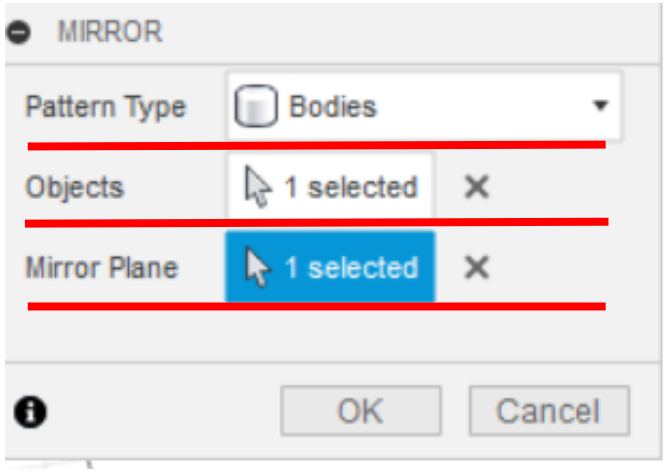


Mirror

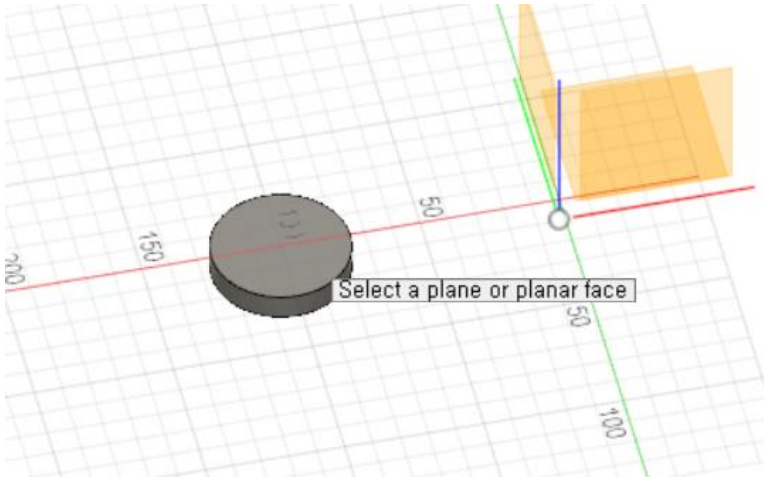


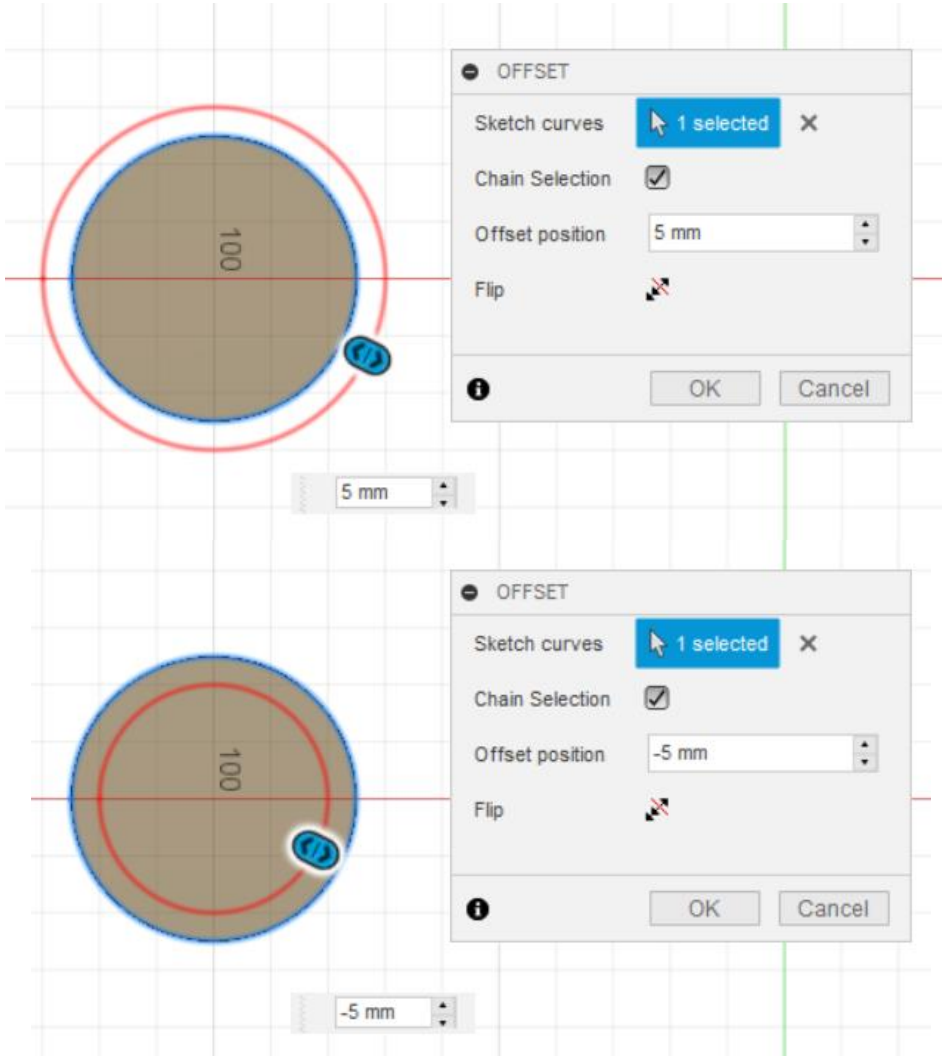


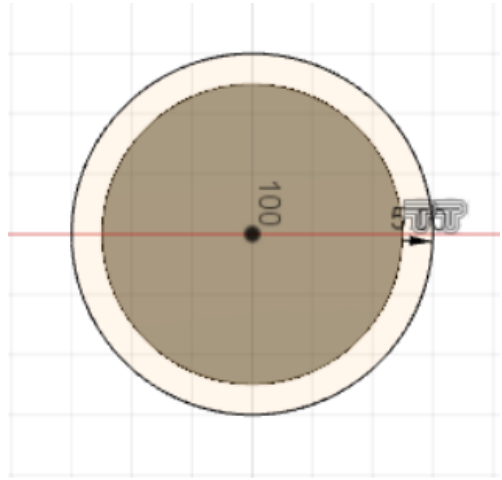


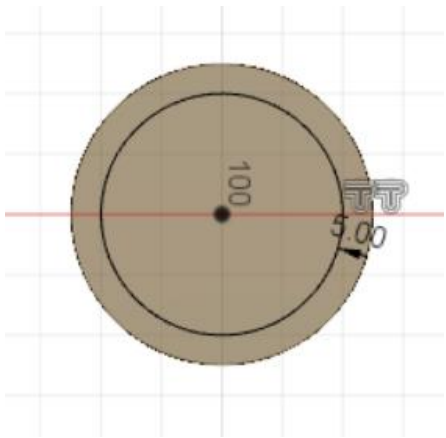

MIRROR
Pattern Type
Bodies
Objects
1 selected
Mirror Plane
1 selected
OK
Cancel

Offset

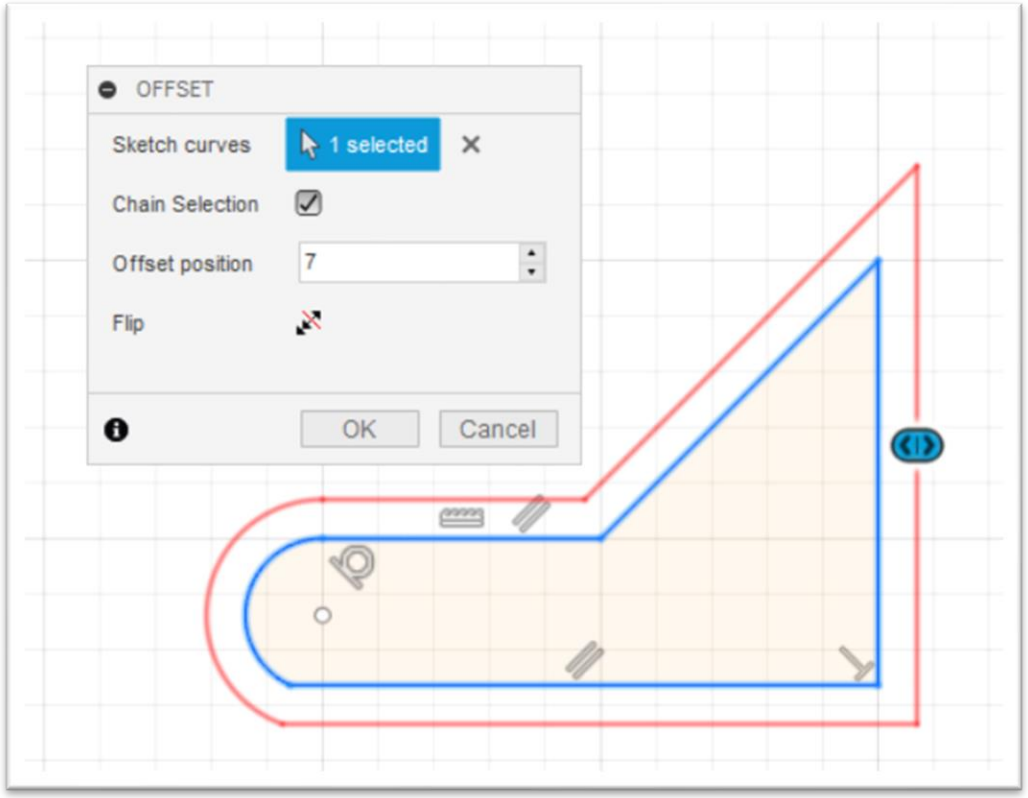

Select a plane or planar face
150
50
50
100


OFFSET
Sketch curves
1 selected
Chain Selection
Offset position
5 mm
Flip
OK
Cancel
100
5 mm
OFFSET
Sketch curves
1 selected
Chain Selection
Offset position
-5 mm
Flip
OK
Cancel
100
-5 mm


100
5.00


100
5.00

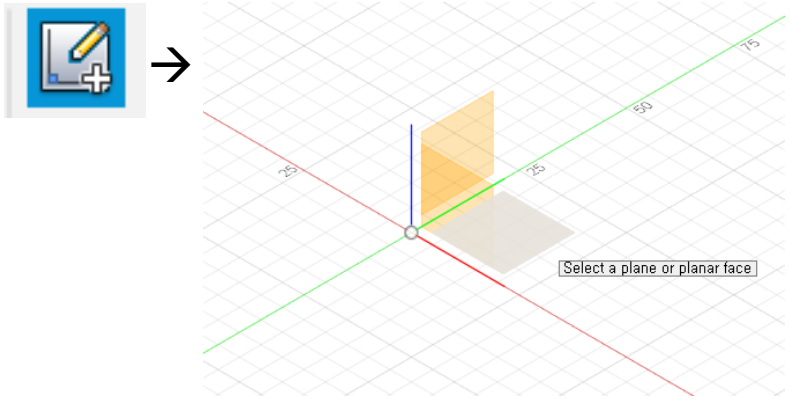
Offset


OFFSET
Sketch curves
1 selected
Chain Selection
Offset position
7
Flip
OK
Cancel

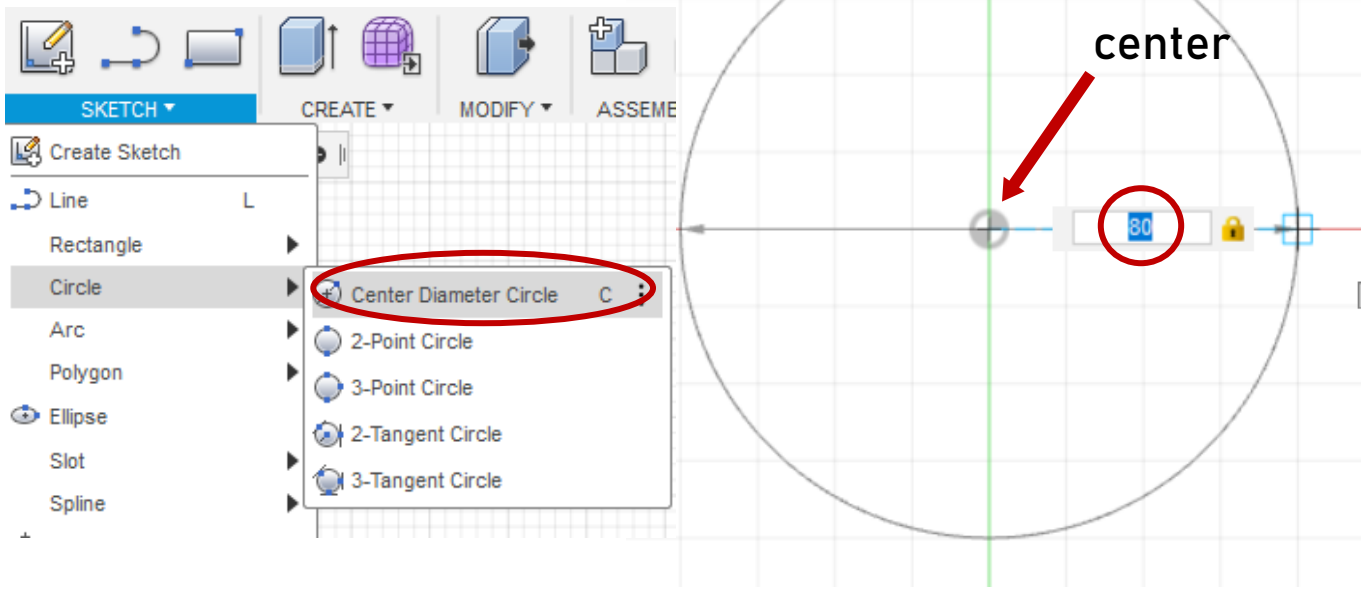
Exercise 2: making <MUG CUP>

Step 1 : sketch circle

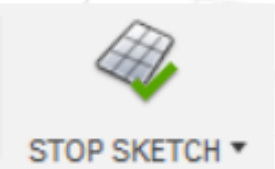
1) Create sketch → select xy plane



2) SKETCH→ Circle→ Center Diameter Circle→ diameter =100mm

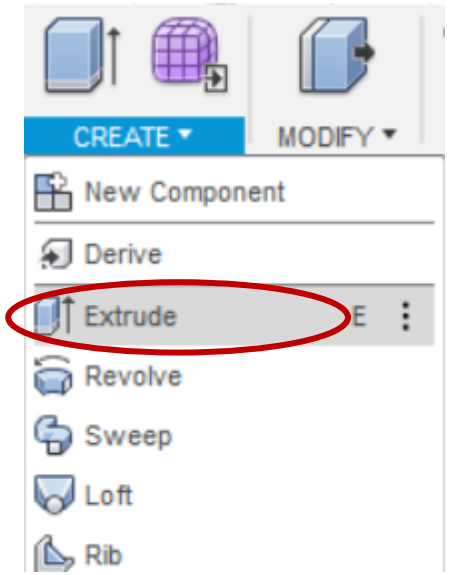


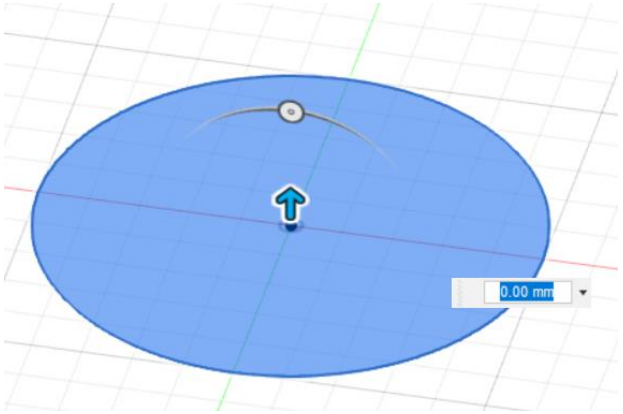
3) Click [Stop sketch]!



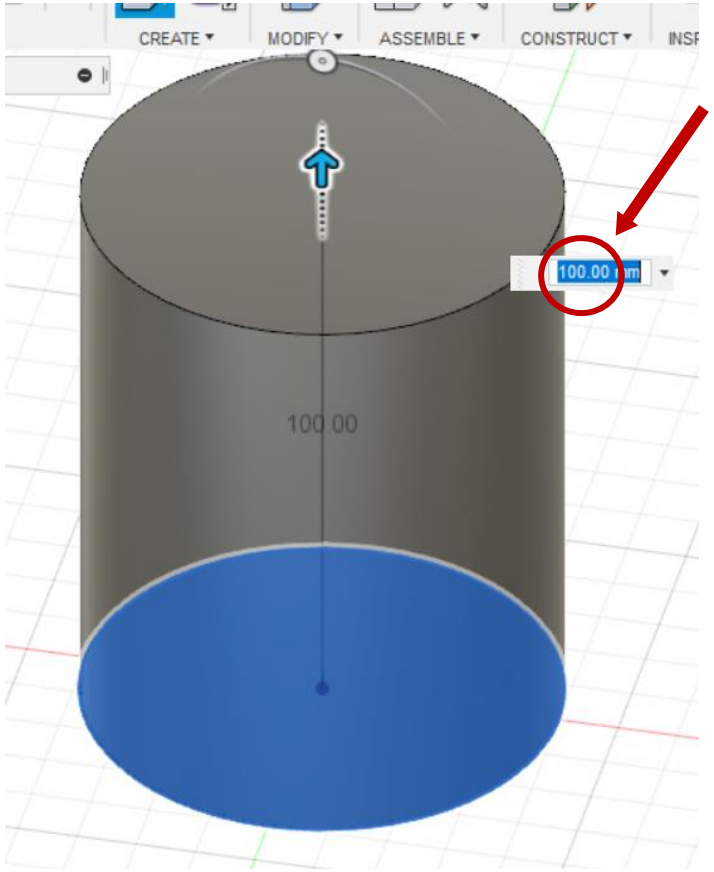
Step 2 : Extrude

2) [Create] → Extrude





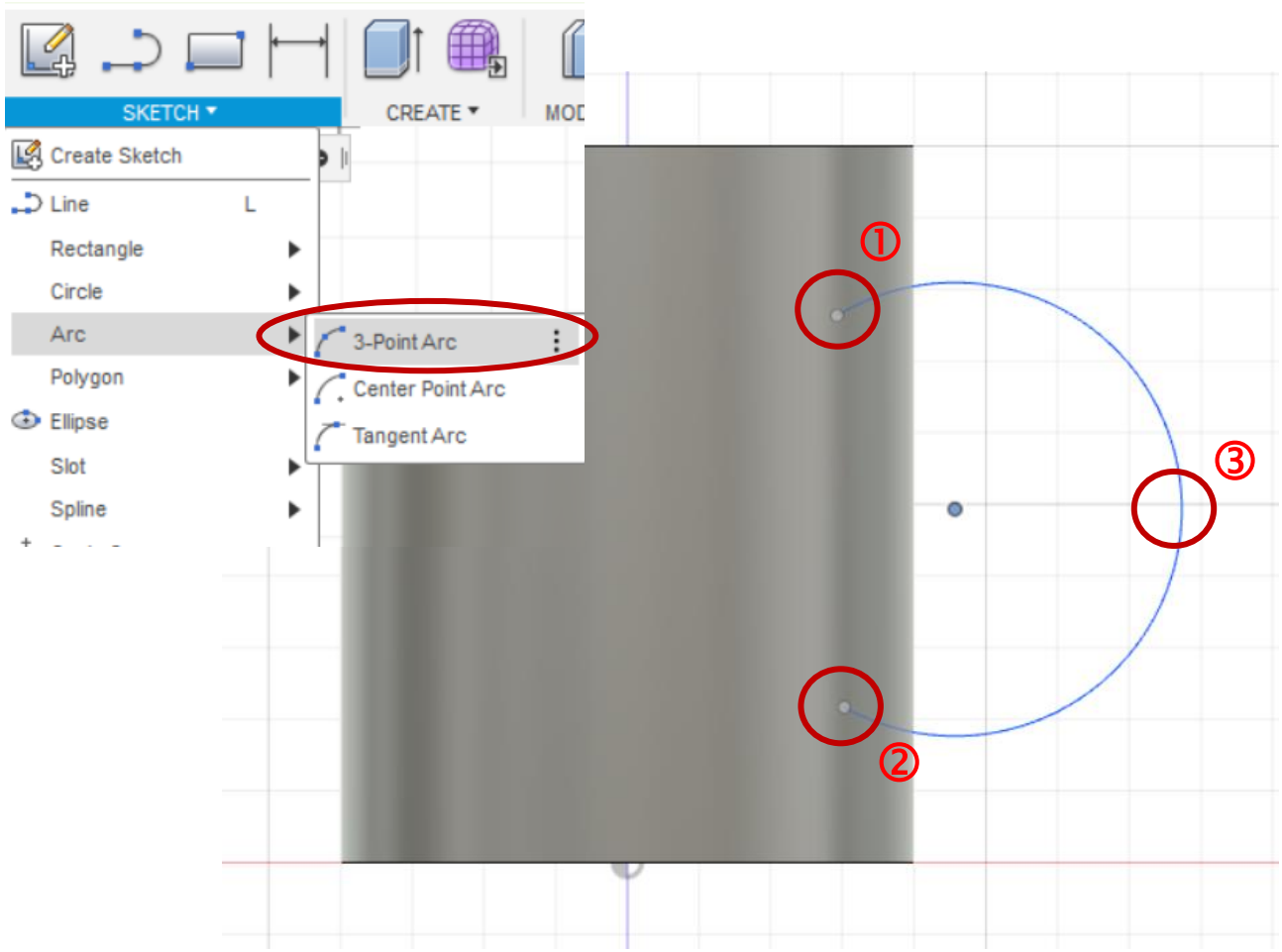
2) Extrude 100mm



Step 3: Draw Arc

1) [Create sketch] → select xy plane

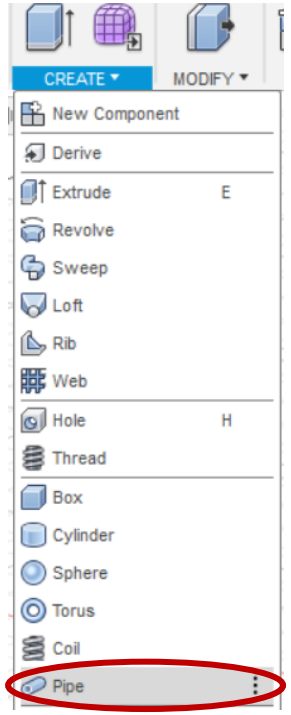
2) [Sketch]→ Arc→ 3-Point Arc



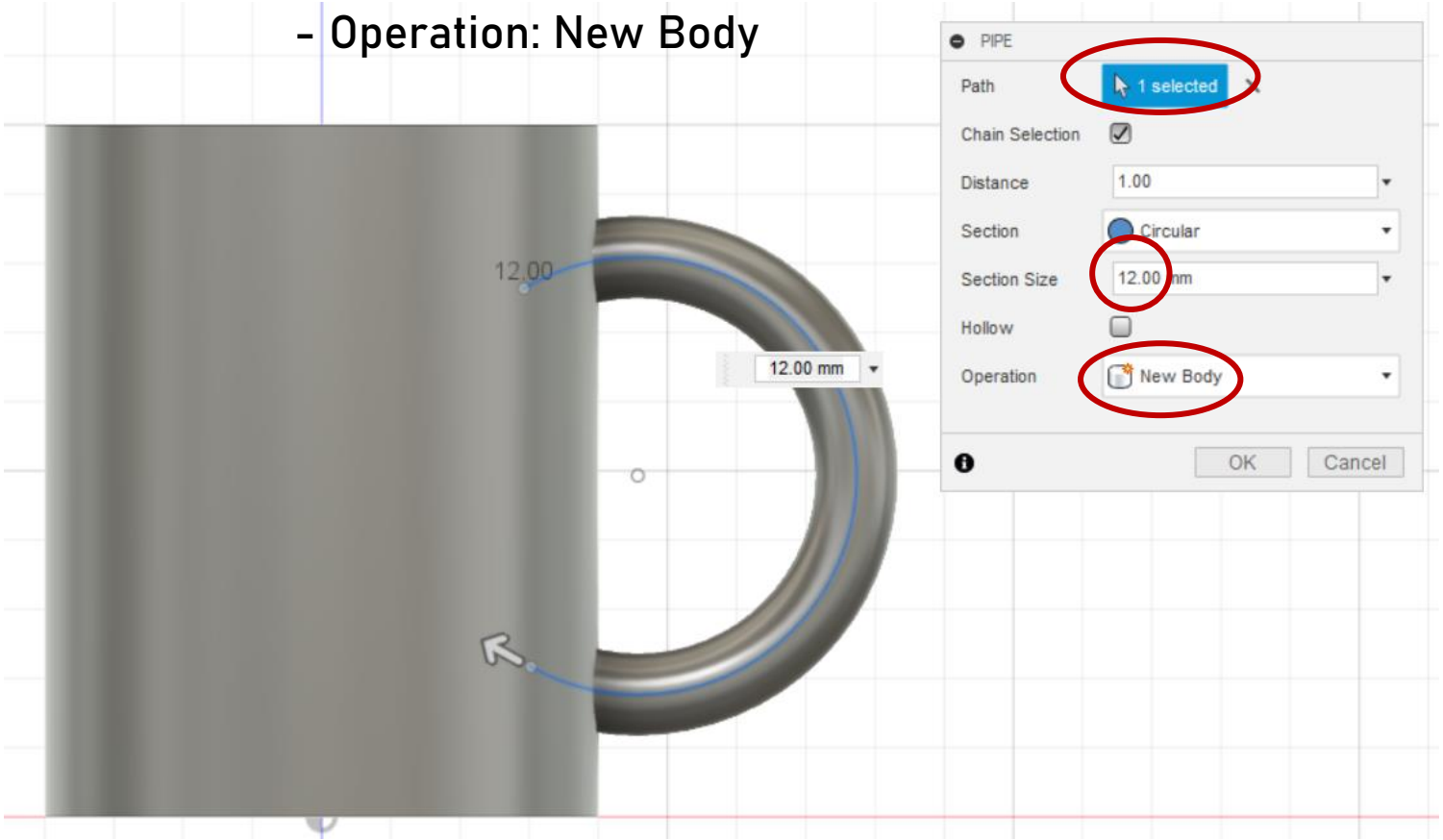
3) Click [Stop sketch]!

Step 4 : Pipe

1) [Create] → Pipe

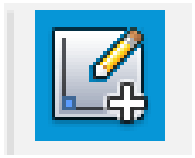


2) - Select Path
- Section Size: 10mm
- Operation: New Body

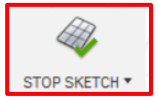


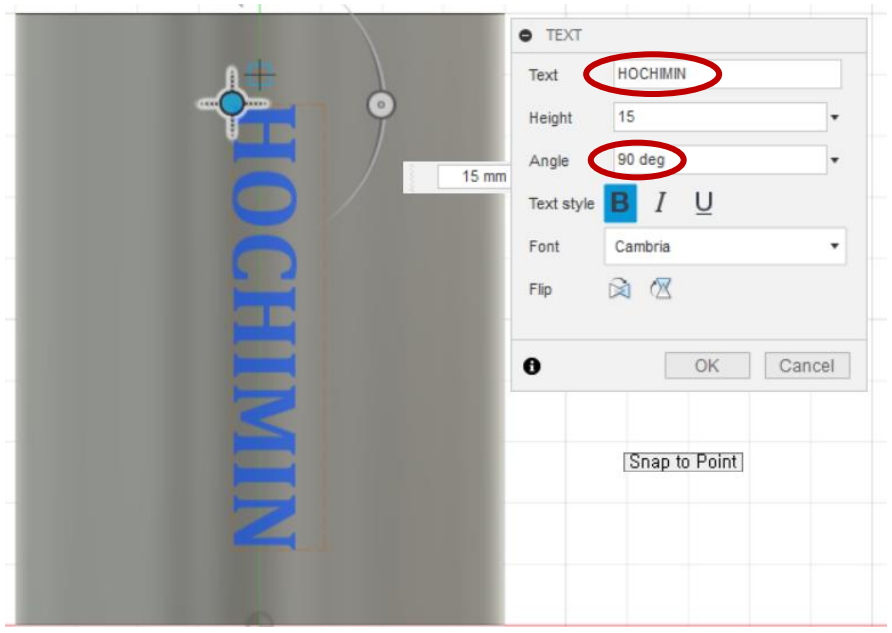
Step 5: Text Sketch

1) [Create sketch] → select YZ plane

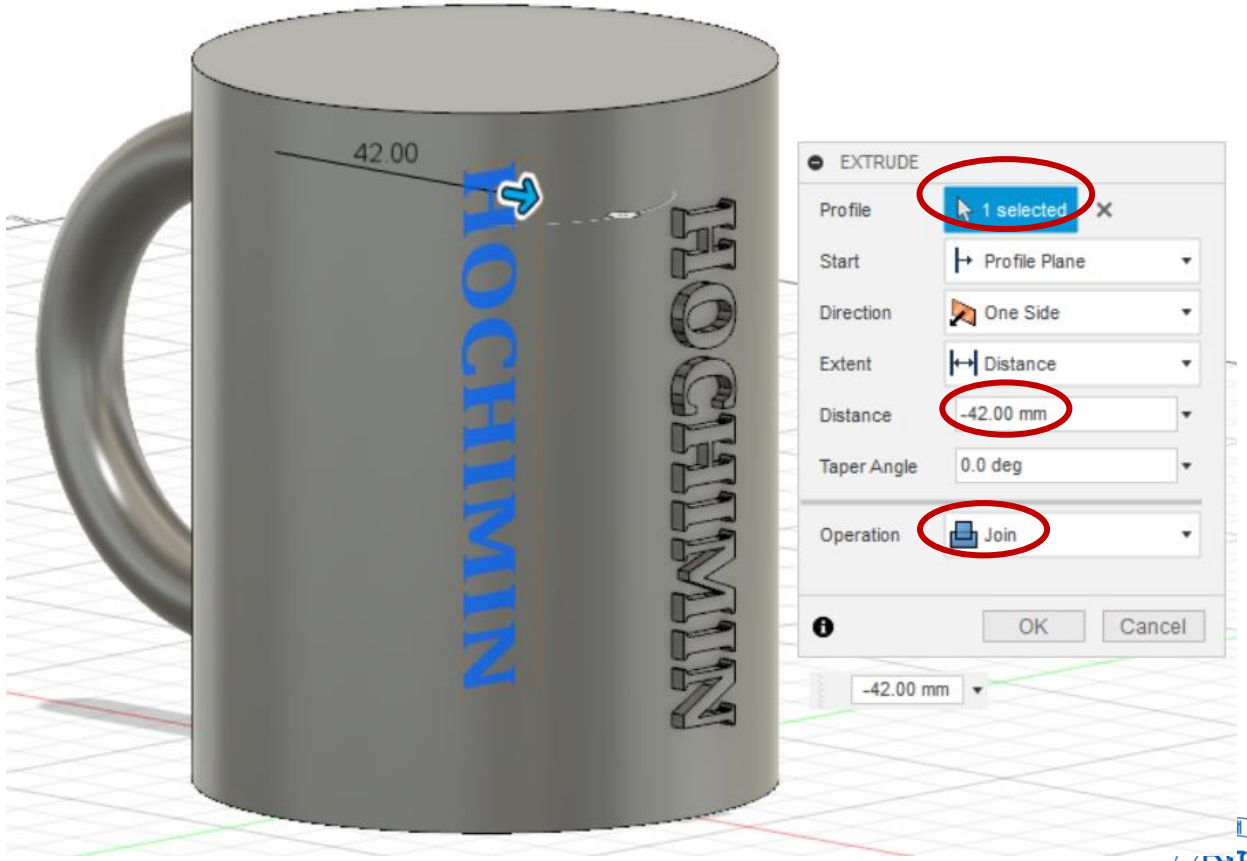


2) - Text the word/// Angle: 90deg→





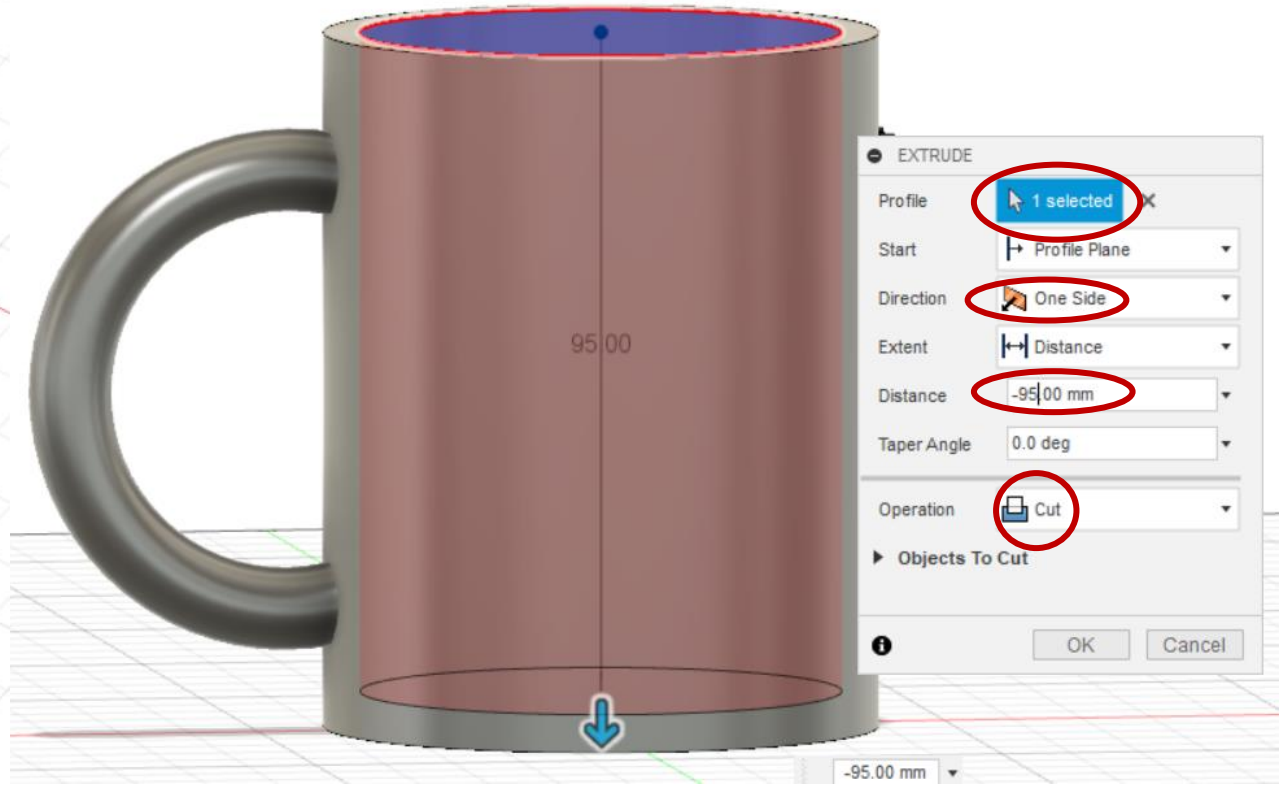
3) - Select the text
- Distance: -42mm
- Operation: Join



Step 6: Extrude Upper plane

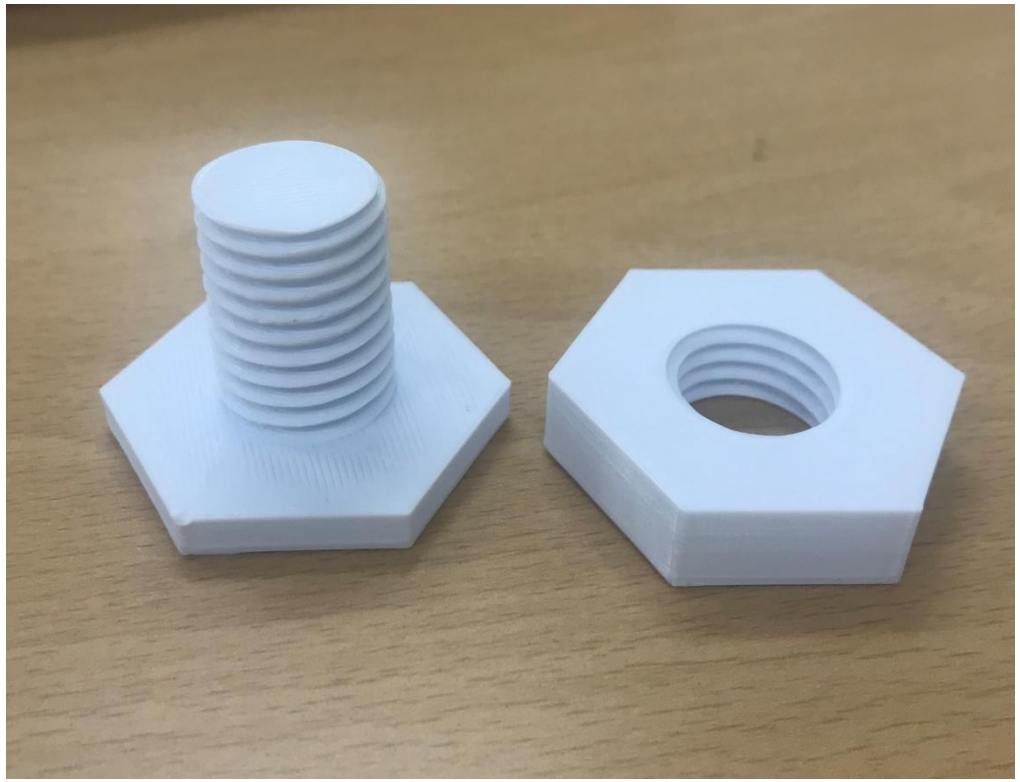
1) [Create sketch] → Select a Upper circle plane

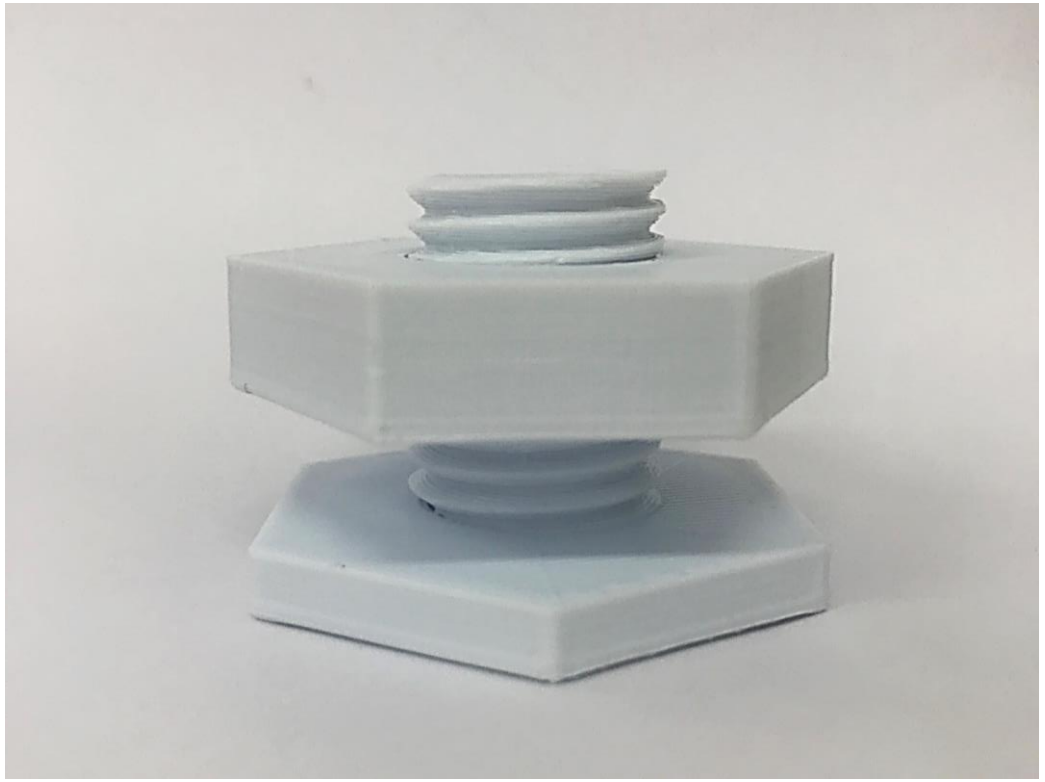
2) Draw the Circle→ and Extrude!



Step 6: Well Done!

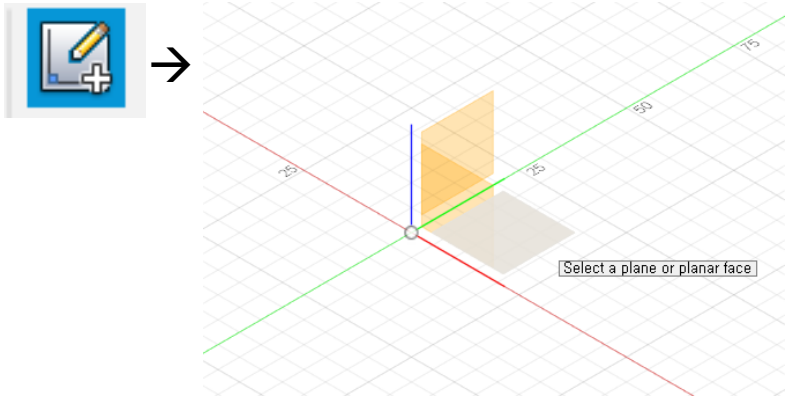
Exercise 4 : making <**M20X2.5 bolt nut**>



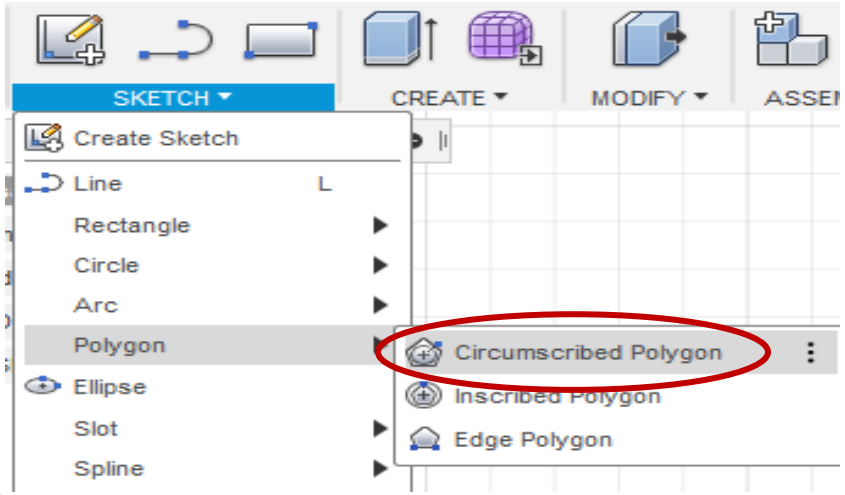


Step 1 : sketch polygon

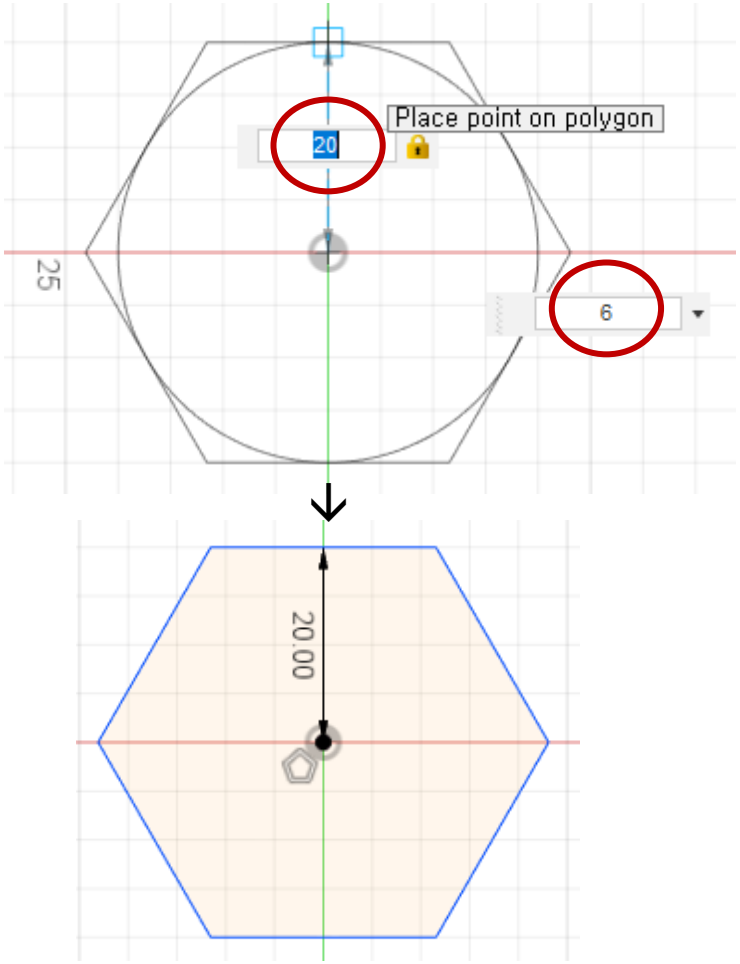
1) Create sketch -> select xy plane



2) Menu 'sketch' -> polygon -> circumscribed polygon

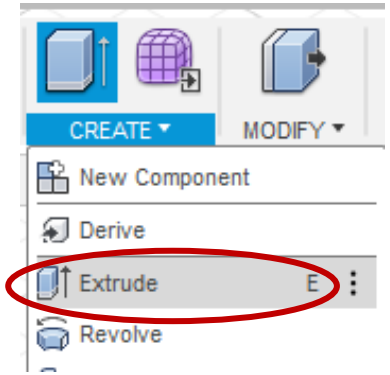


3) Radius 20mm / # of points = 6

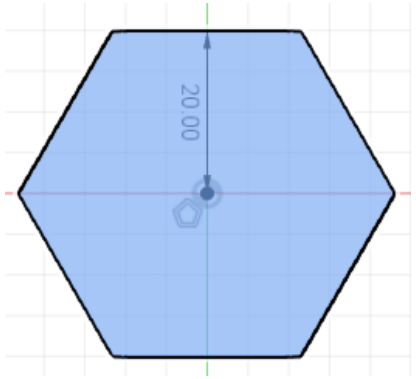


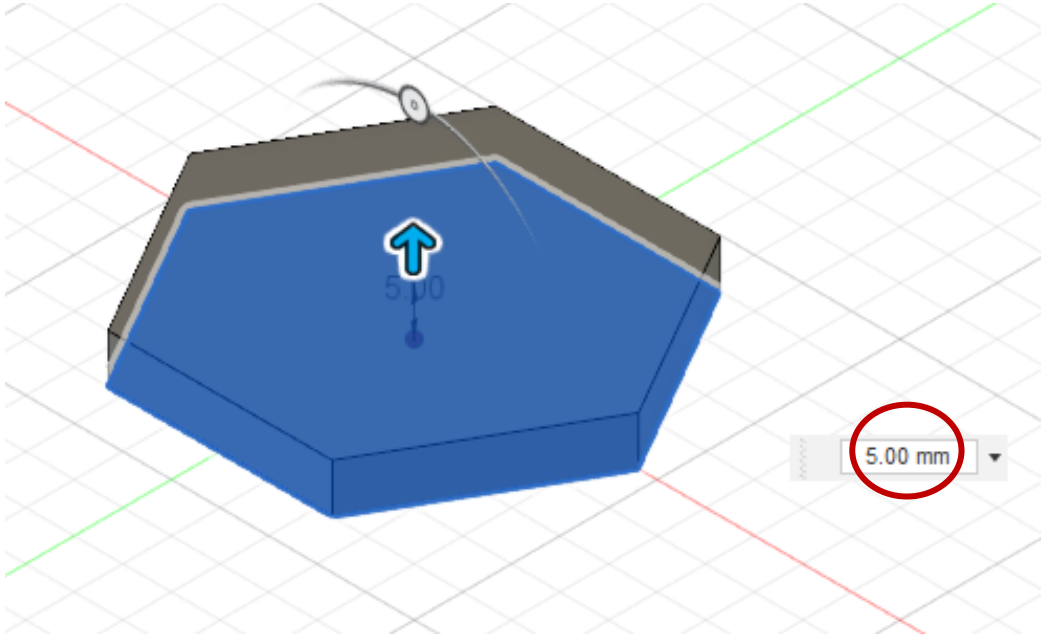
Step 2 : extrude

1) CREATE -> Extrude



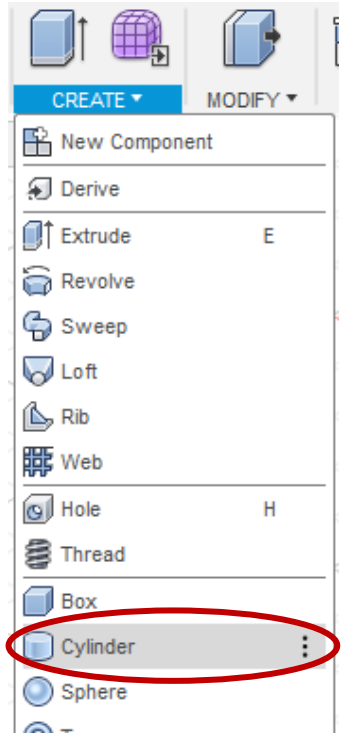
2)Select sketch -> Extrude 5mm



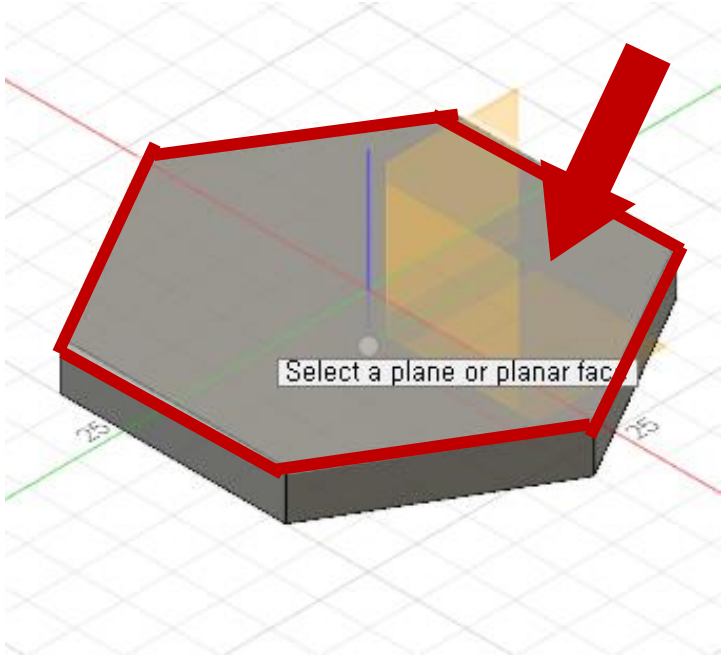


Step 3 : create cylinder

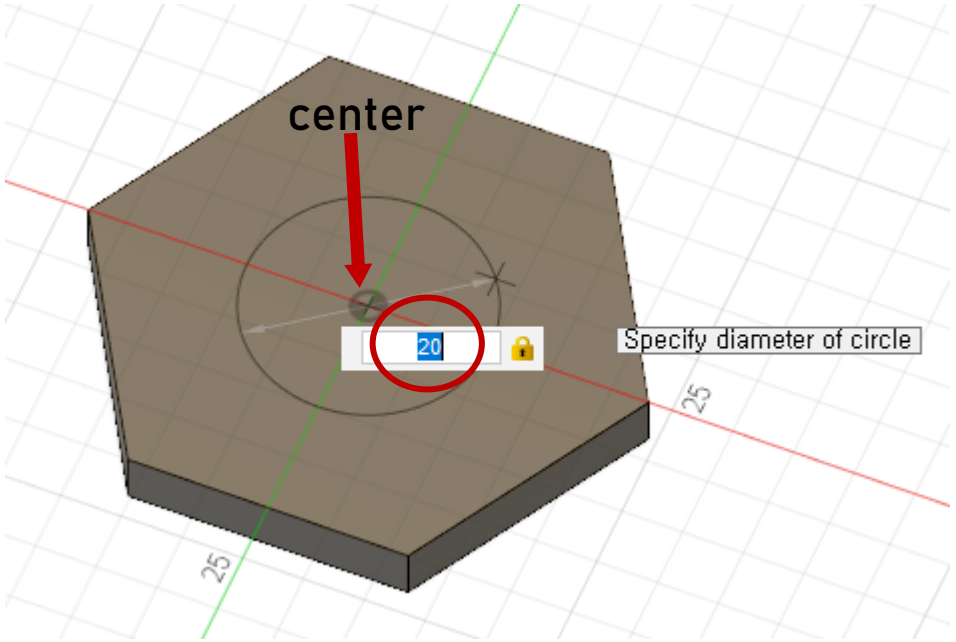
1) CREATE -> cylinder



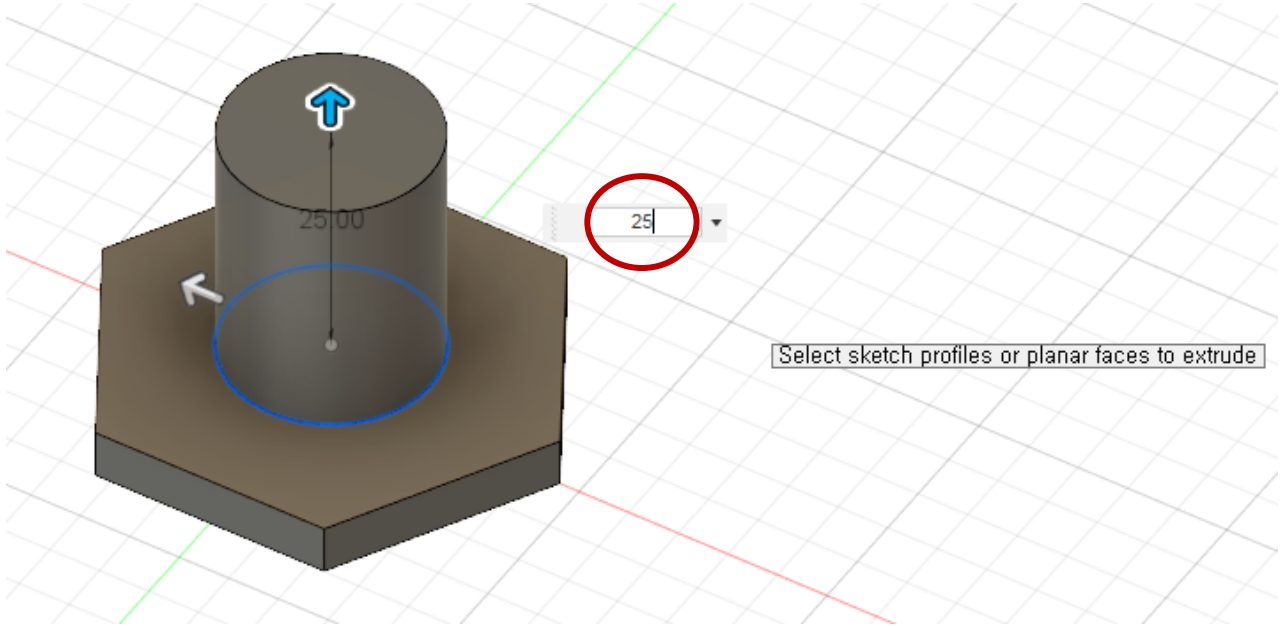
2) Select top plane !!



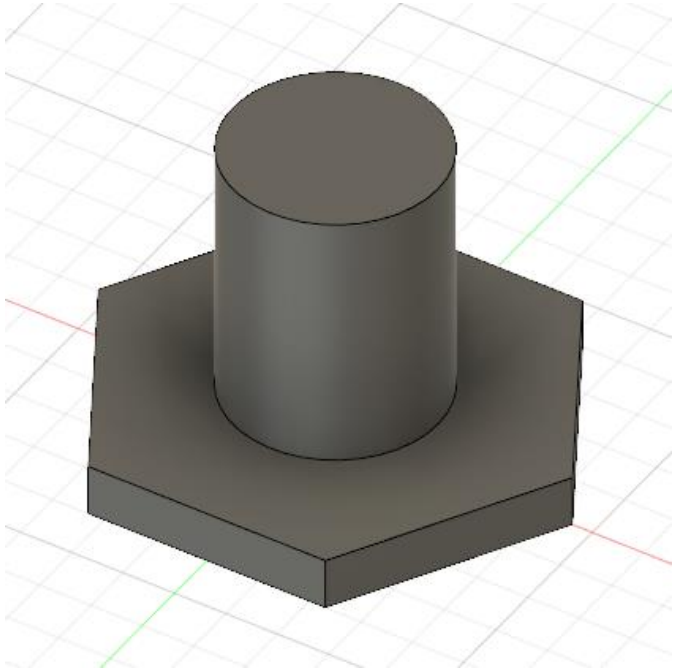
3) Sketch circle (diameter : 20mm)



4) height : 25 mm

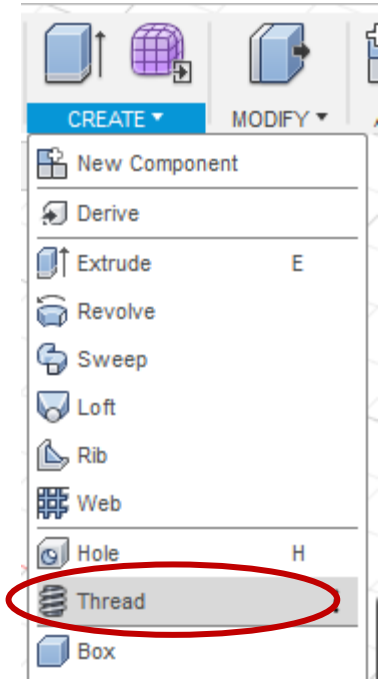


→

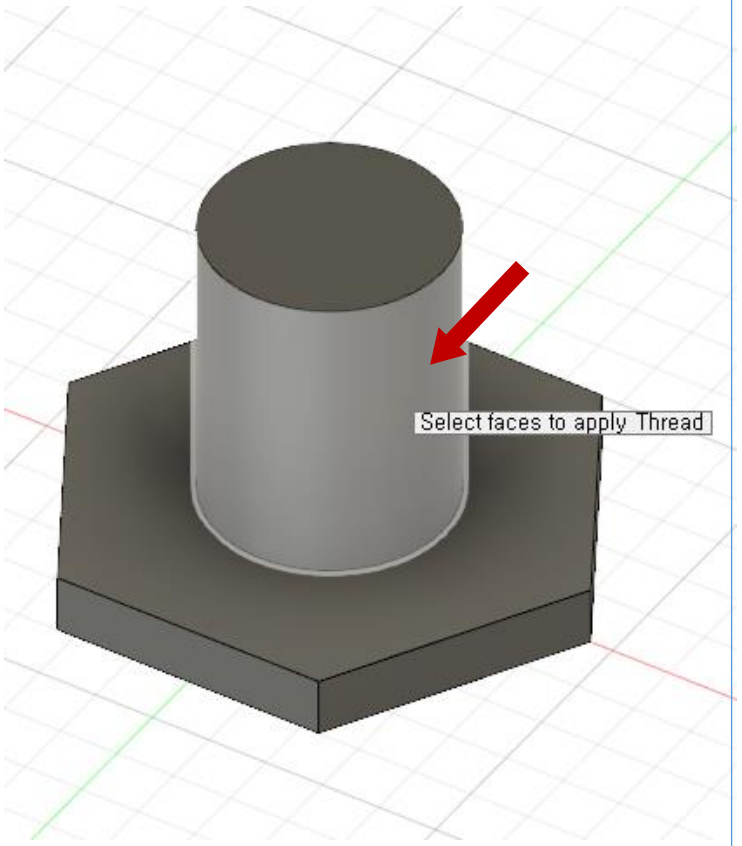


Step 4 : add thread

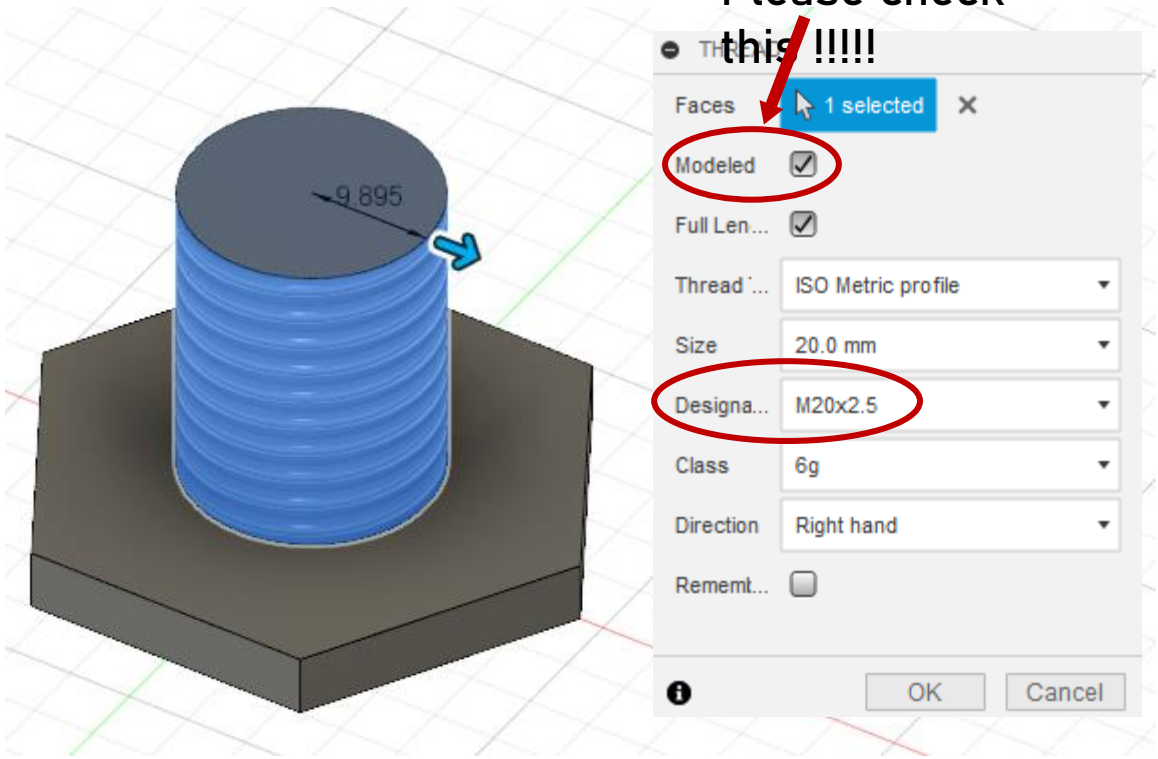
1) CREATE -> thread



2) Select side face

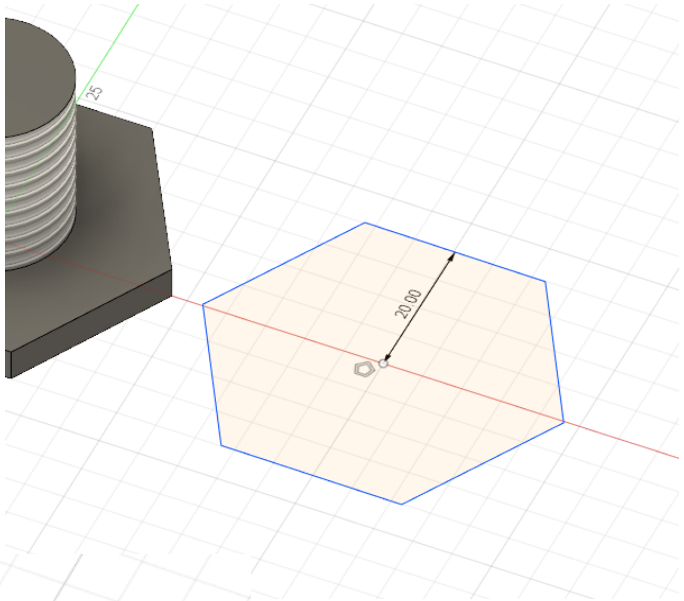


3) Check designation & enter!

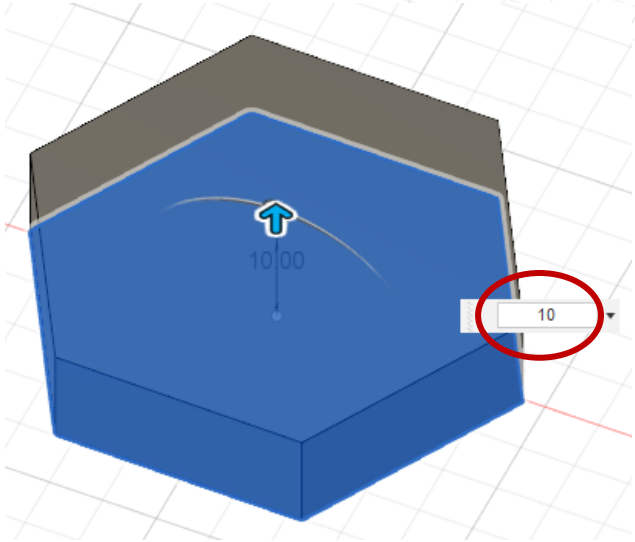


Step 5 : make the nut plate

1) Sketch polygon --> “step 1” 참고 !

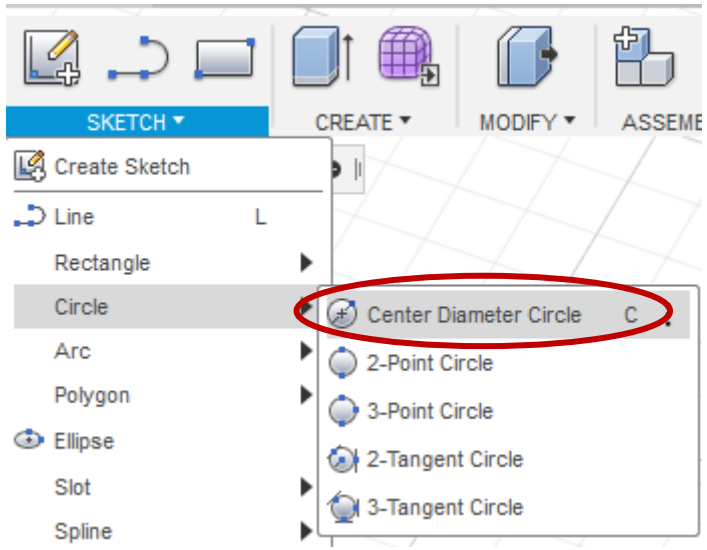


2) Extrude 10mm

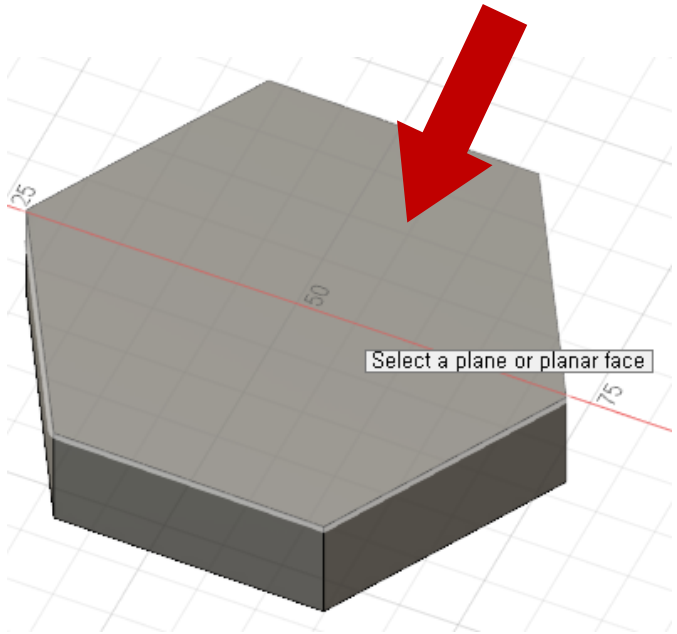


Step 6 : cut plate

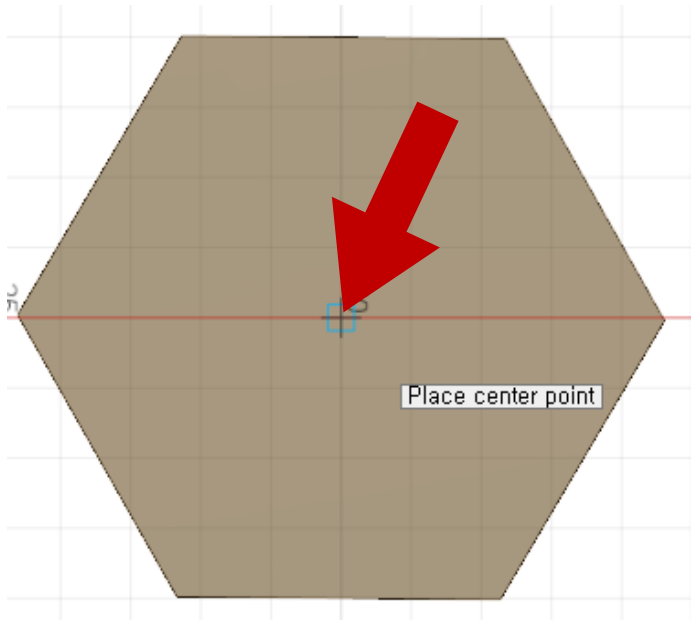
1) SKETCH -> Circle -> Center Diameter Circle



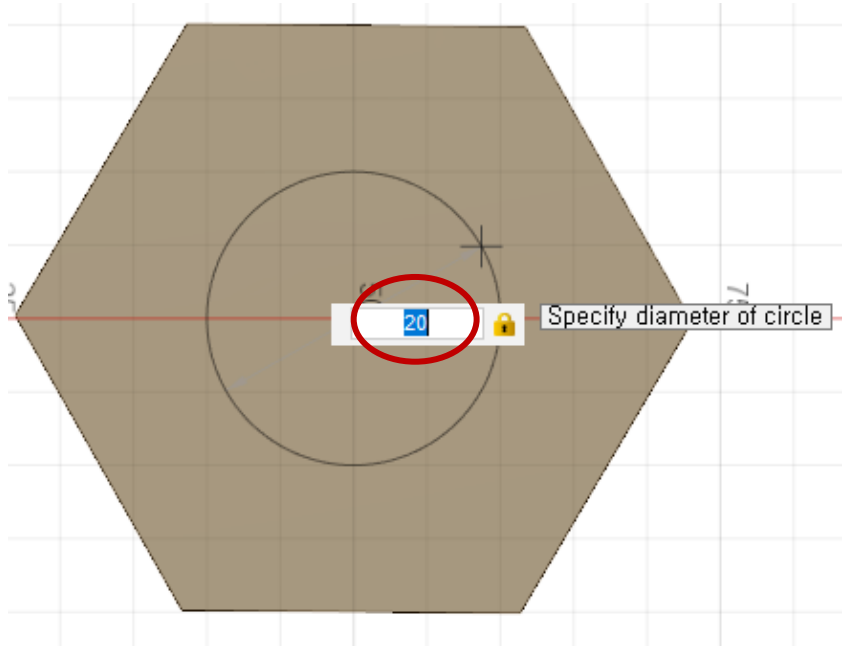
2) Select top plane



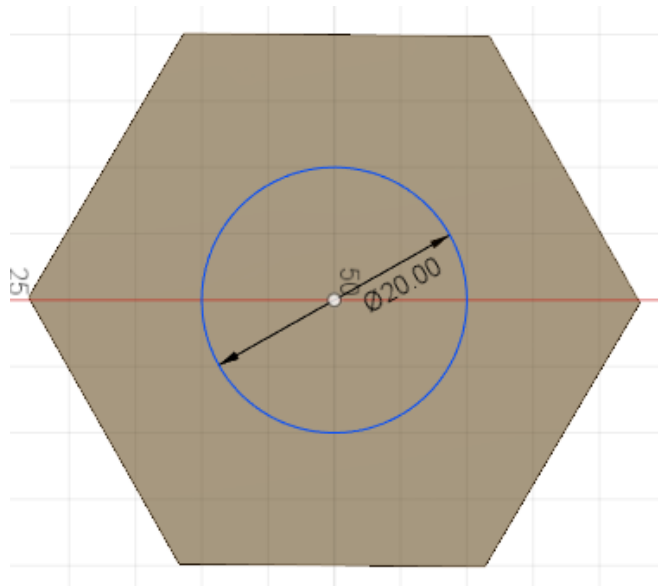
3) Place center point



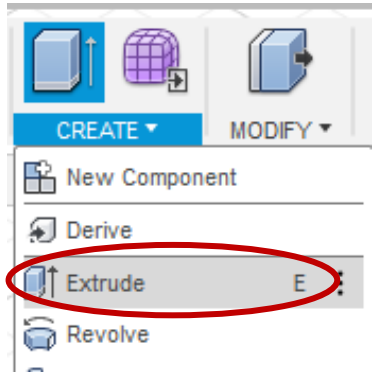
4) diameter = 20mm!



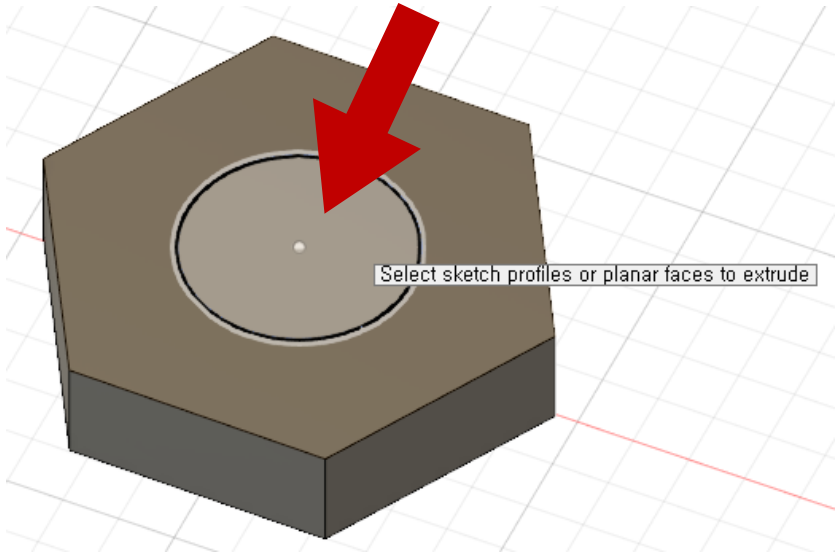
→



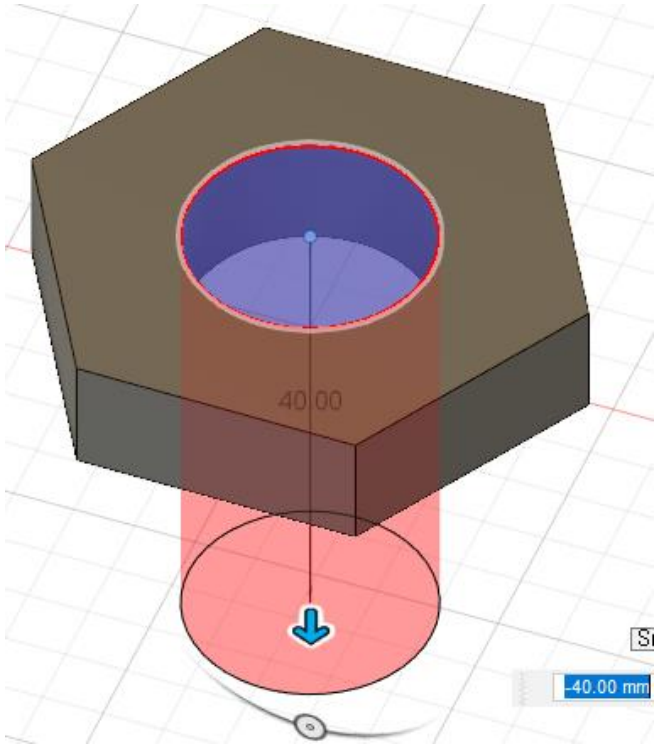
5)CREATE -> extrude



6) Select plane: click circle

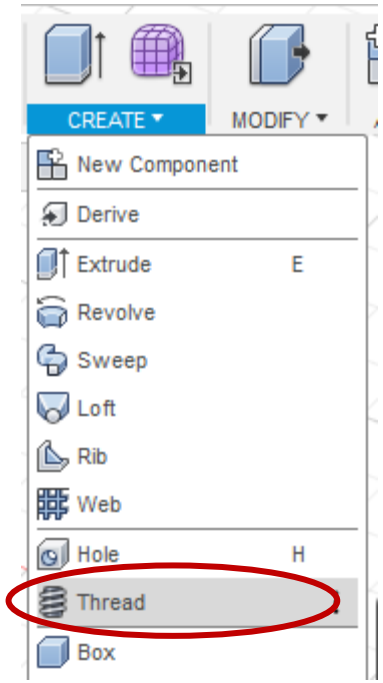


7) Drag blue arrow in the (-) direction

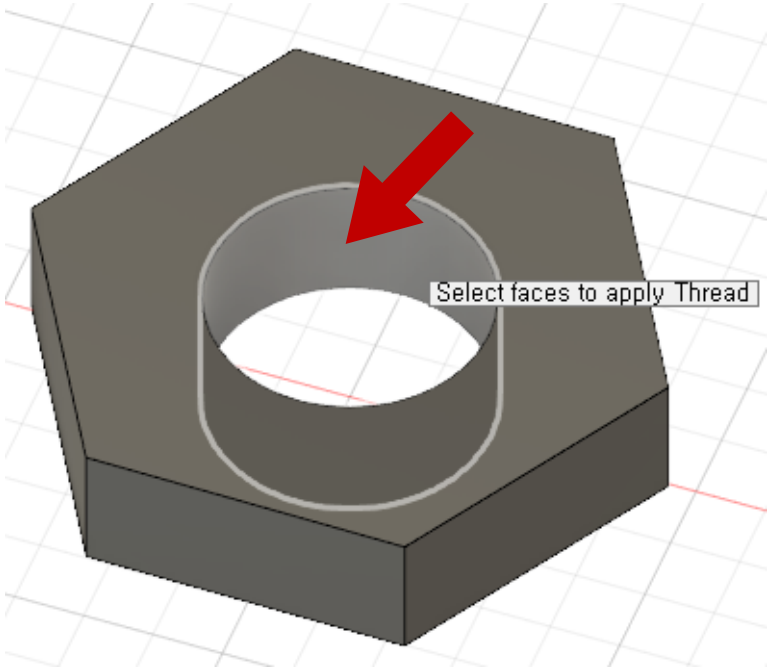


Step 7 : add thread

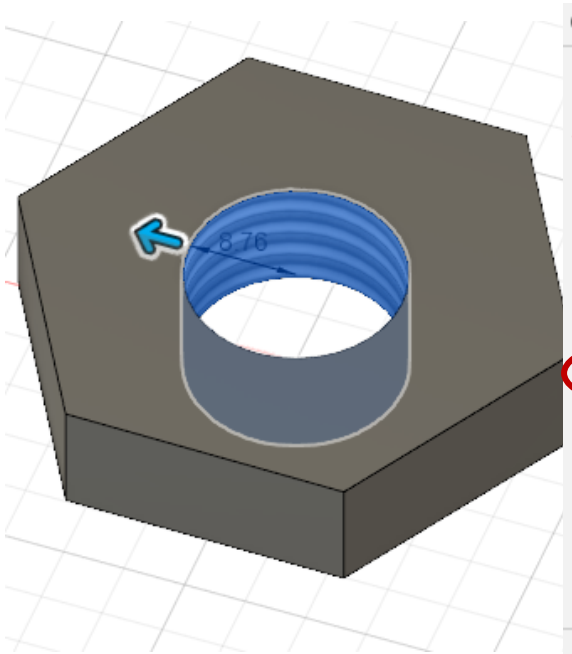
1) CREATE -> thread



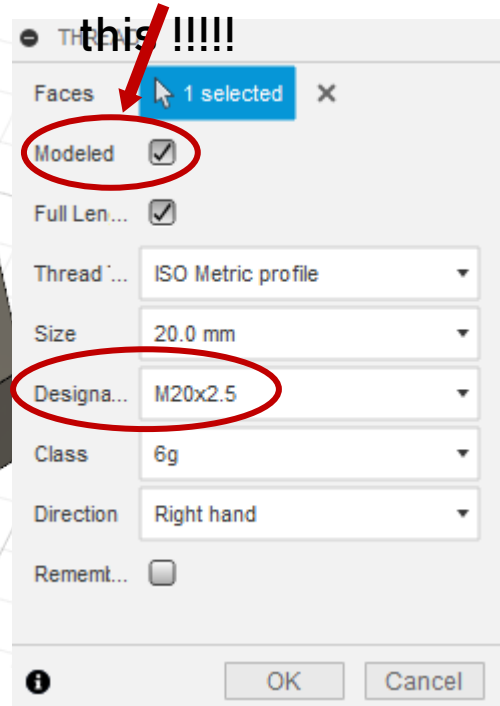
2) Select inner face



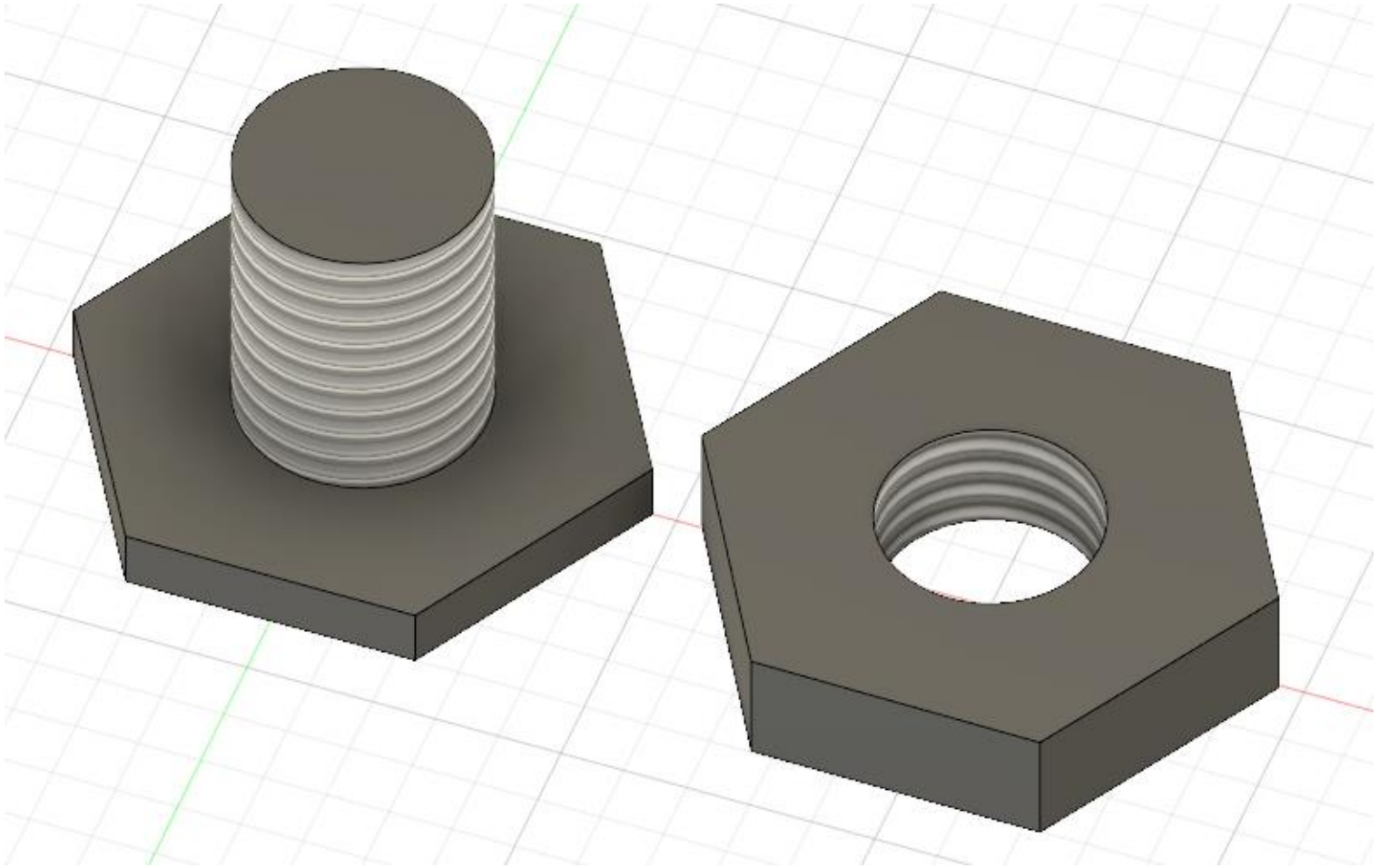
3) Check designation & enter!



Please check this !!!!!



Finish~ ^^!



CREALITY

Slicer Program

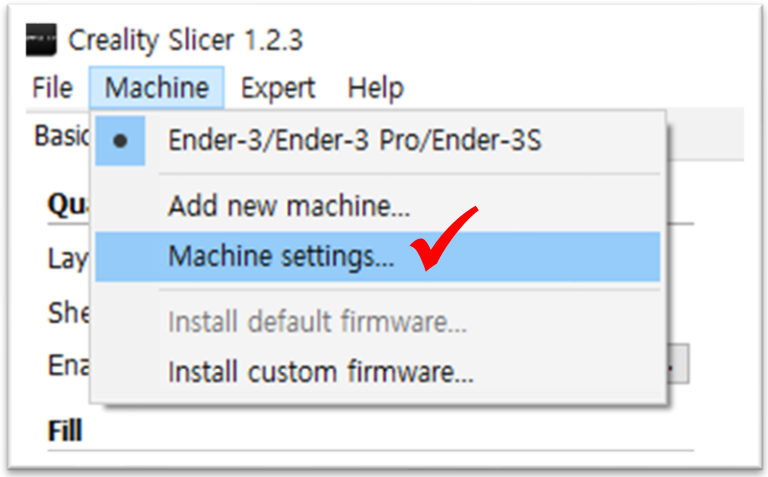
Change Filename Extension

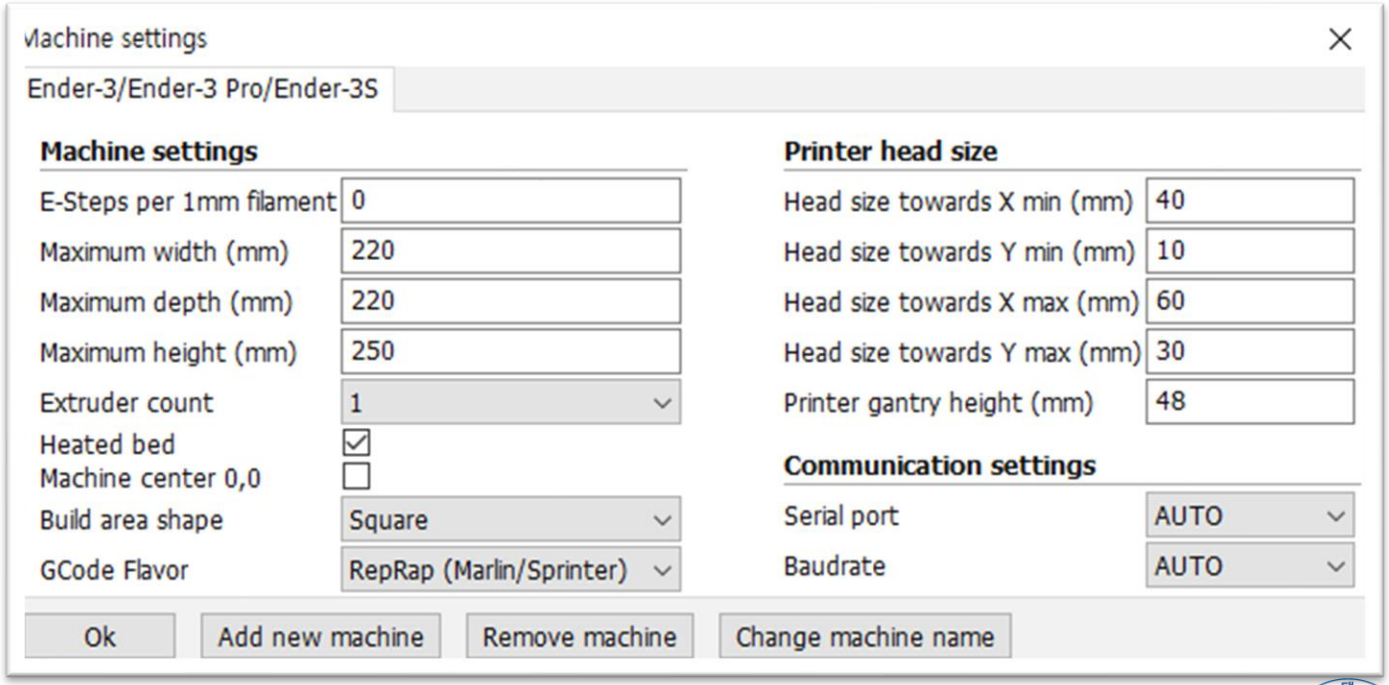
First, Double Click!

.stl → .gcode

Machine Setting (for Ender3)

- **[Machine] → [Machine Settings]**





Machine settings

Ender-3/Ender-3 Pro/Ender-3S

Machine settings

E-Steps per 1mm filament	0
Maximum width (mm)	220
Maximum depth (mm)	220
Maximum height (mm)	250
Extruder count	1
Heated bed	☑
Machine center 0,0	☐
Build area shape	Square
GCode Flavor	RepRap (Marlin/Sprinter)

Printer head size

Head size towards X min (mm)	40
Head size towards Y min (mm)	10
Head size towards X max (mm)	60
Head size towards Y max (mm)	30
Printer gantry height (mm)	48

Communication settings

Serial port	AUTO
Baudrate	AUTO

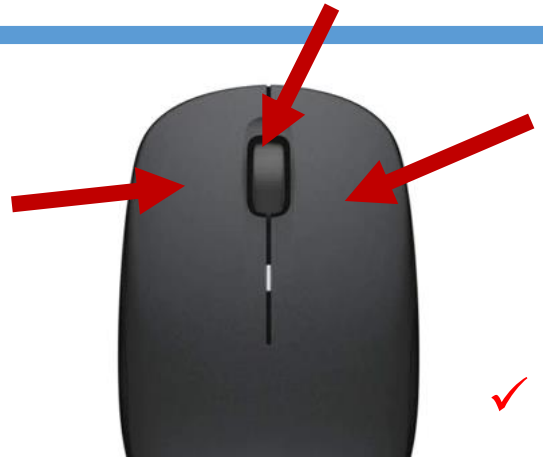
Ok | Add new machine | Remove machine | Change machine name

How to Use ?

(Wheel) Scale

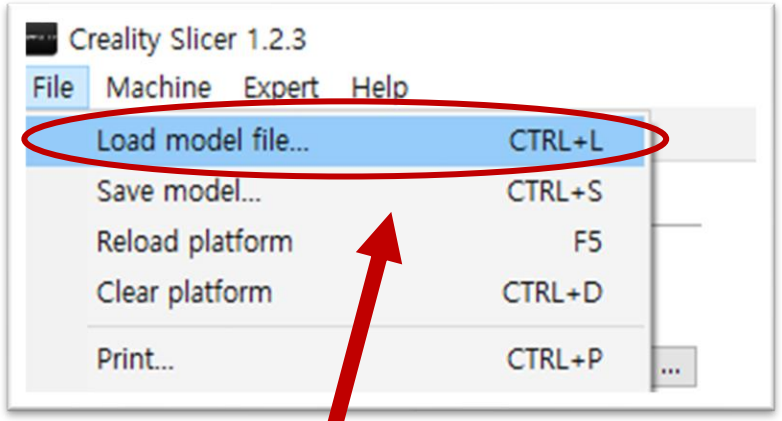
(Right) Zoom IN/OUT

(Left) Object Move



✓ Similar with **fushion 360**

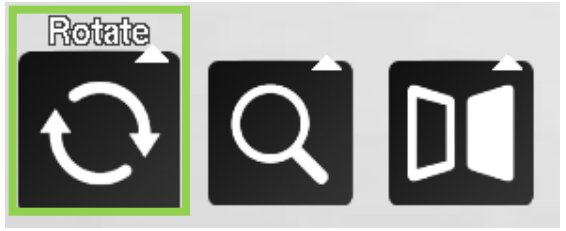
- First, open **.stl** file.



Click this button or File > Load model file ...

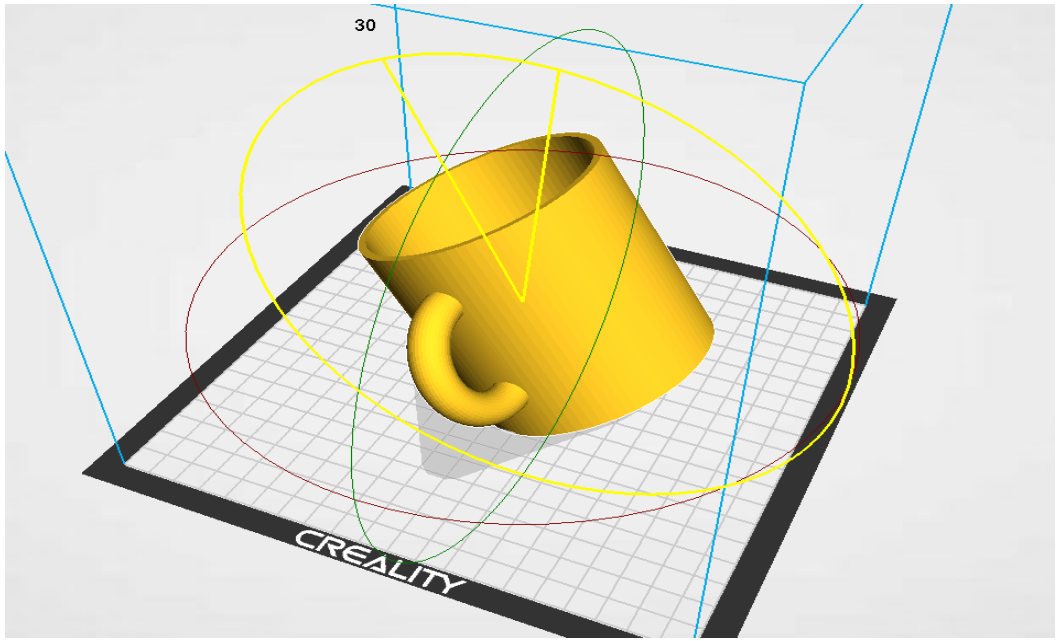
How can we modify objects using Creality ? – ROTATE

1. **Click the Object !**
2. **Look at the 3 buttons below**

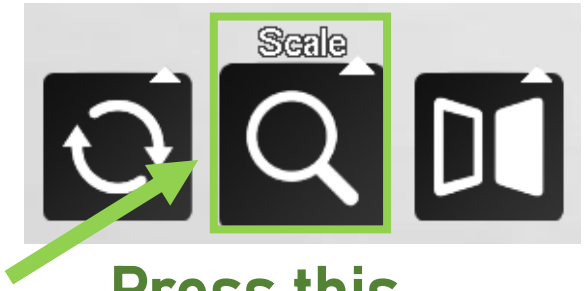


Press this button.

3. **Choose one of these circle and ROTATE**
   You can rotate either X, Y or Z axis ! (But only rotate by 15 degree's)



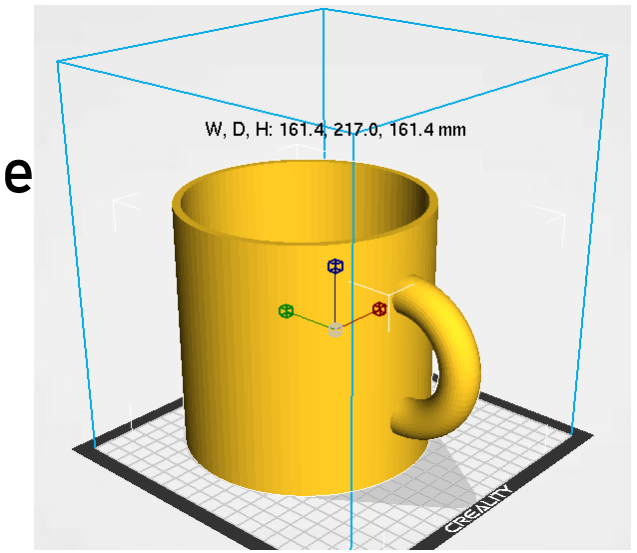
Modifying – SCALE

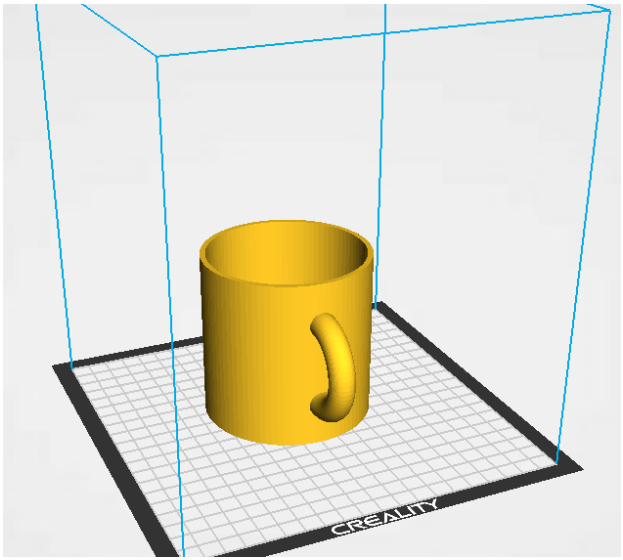


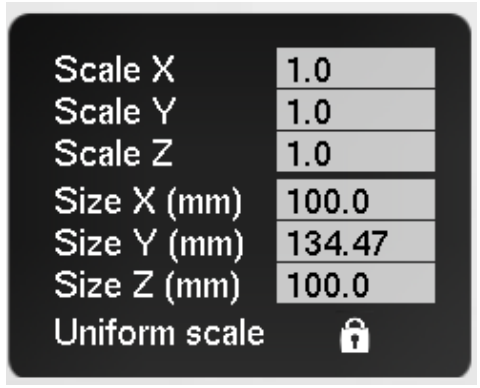
Press this button.

+ Size UP

– Original Size







or

Scale X,Y,Z → Regulate the Multiple

Size X,Y,Z → Regulate the Actual Size

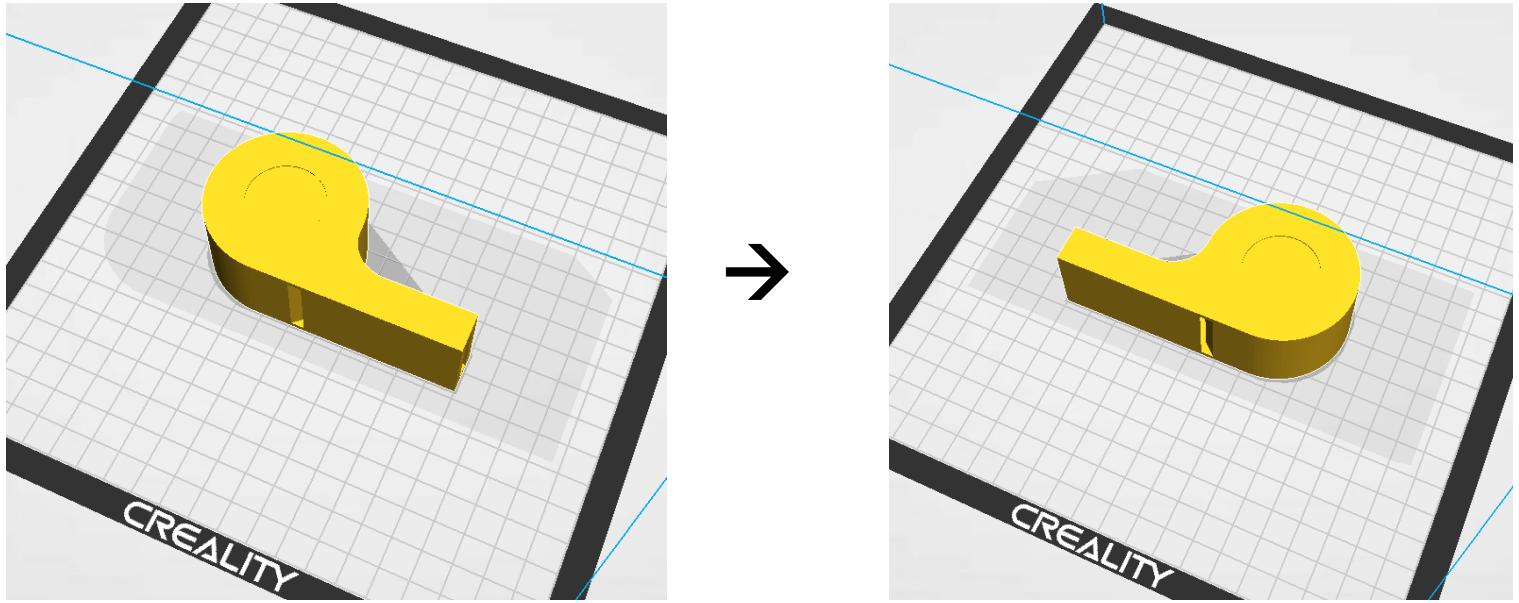
Uniform scale → Fix the Size (O/X)

Modifying – **MIRROR**

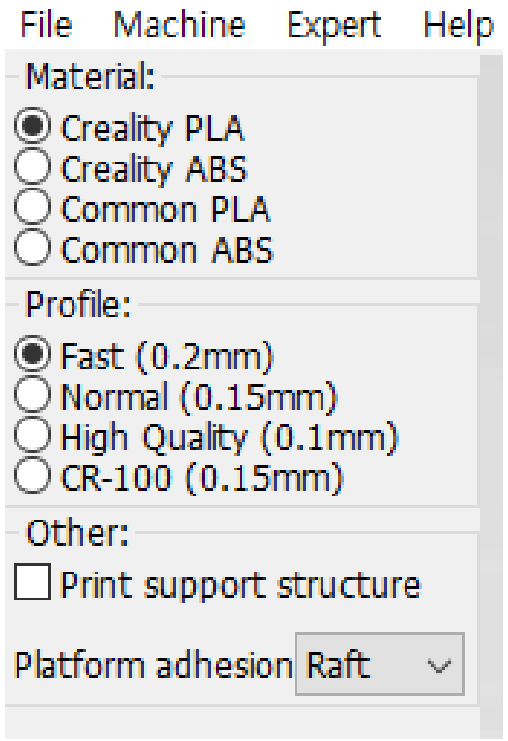
MIRROR the object on the **Axis X, Y, Z**

Press this button.

- For example, **mirror X**

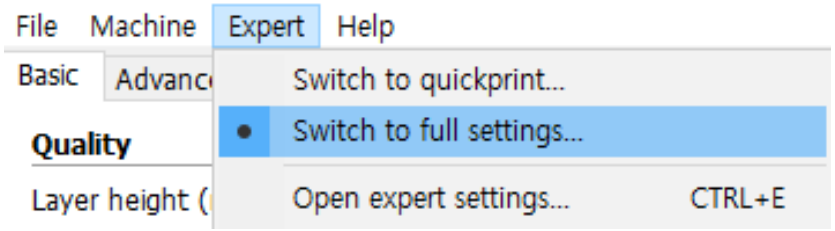


Settings for Print



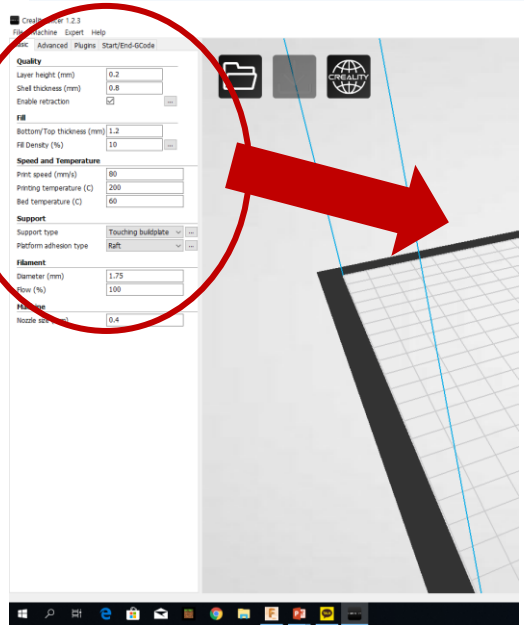
- Material → Creality PLA
- Profile → Fast(0.2mm)
- Print support structure → Check ✓ (If you need Support)
- Platform adhesion → RAFT

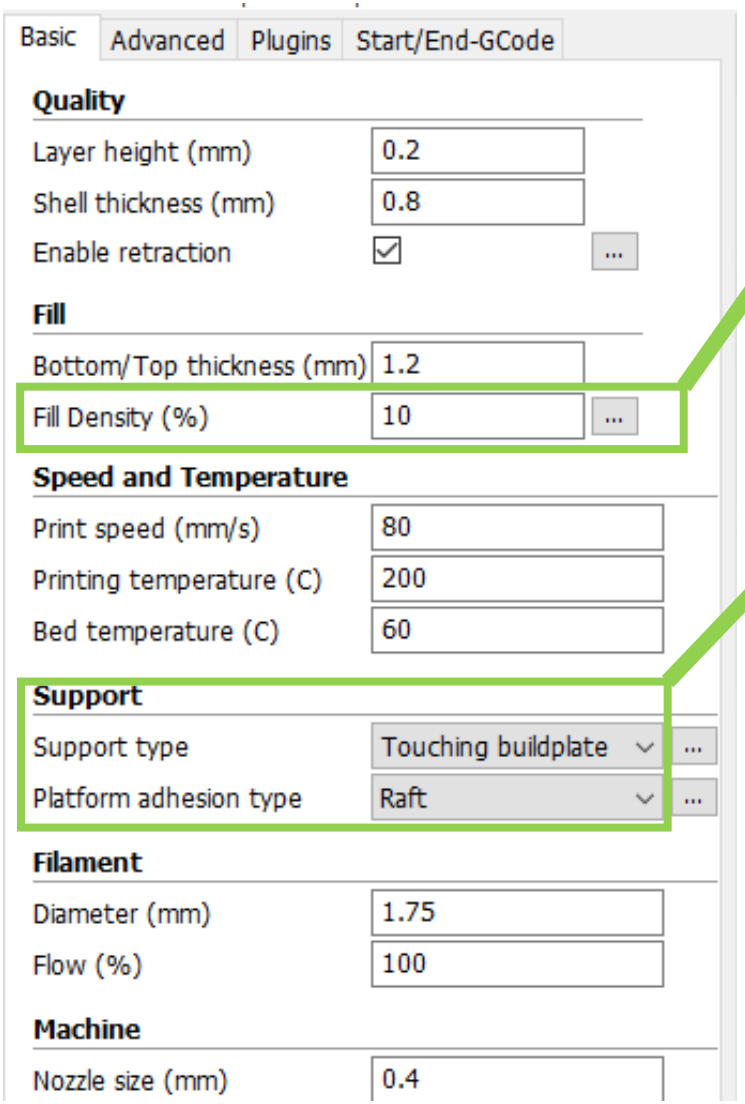
*** Detailed Setting



[Expert] → Click switch to full settings
→ Click Y

Can you see BASIC MENU on the Left?





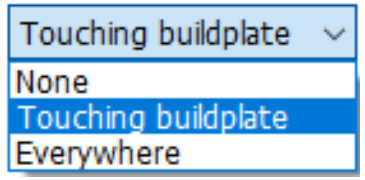
Fill Density

(How much you're going to fill inside)

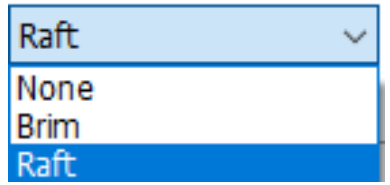
usually **10%**

Setting for Support

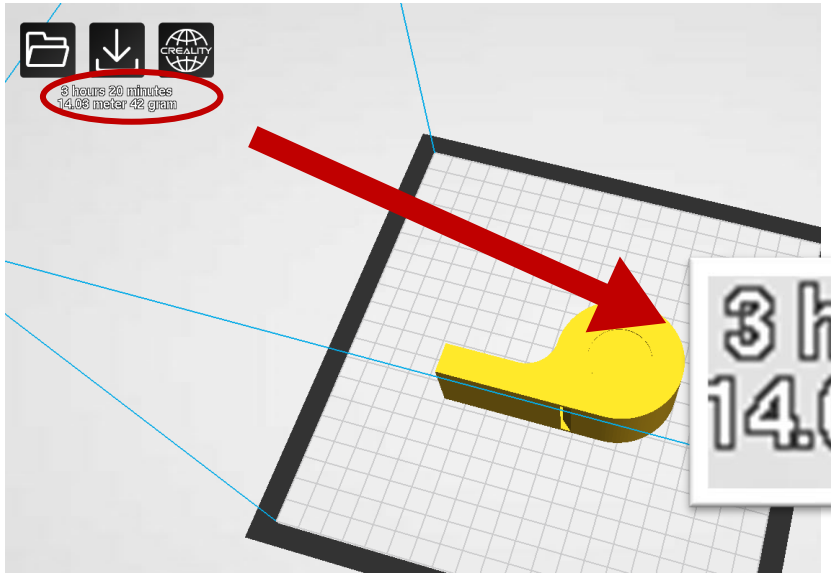
- **Support type**



- **Platform adhesion type**



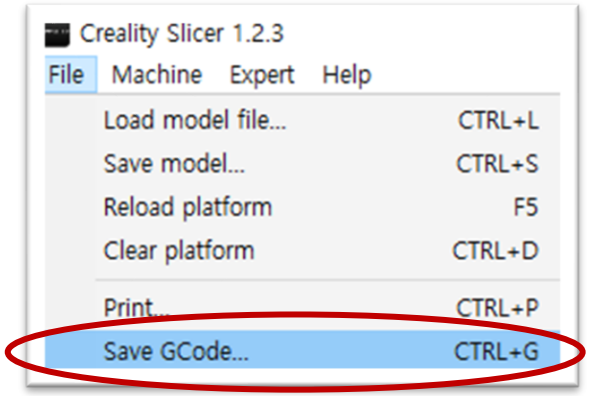
Final Step ! We're Almost there !



Can you see the information below  (or ) ??

→ Lasting Time for Printing

→ Required Weight and Length of Filament



File > Save Gcode ...

or  

→ Save to GCODE

Now, Let's Printout !!!

.gcode