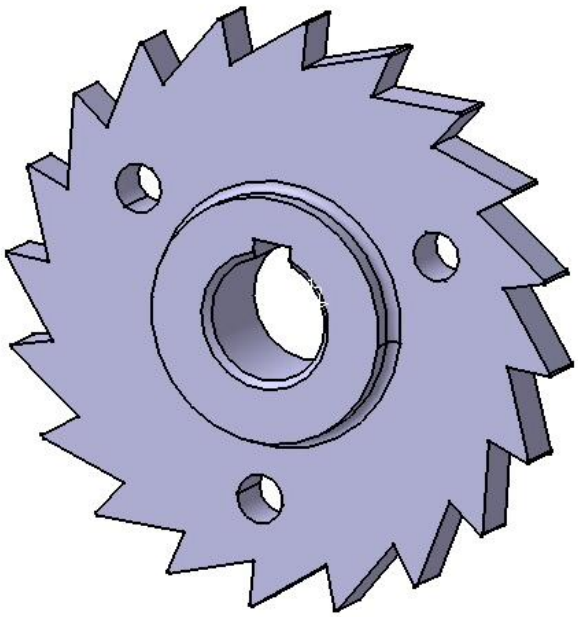
PART DESIGN (RATCHET WHEEL)

From this diagram we have to know,

- Selection of plane
- Drawing circle
- Pad the profile
- Pocket definition
- Circular pattern
- Symmetry constraint
- Trimming
- Chamfer
- Fillet
- Rotate options
- Views

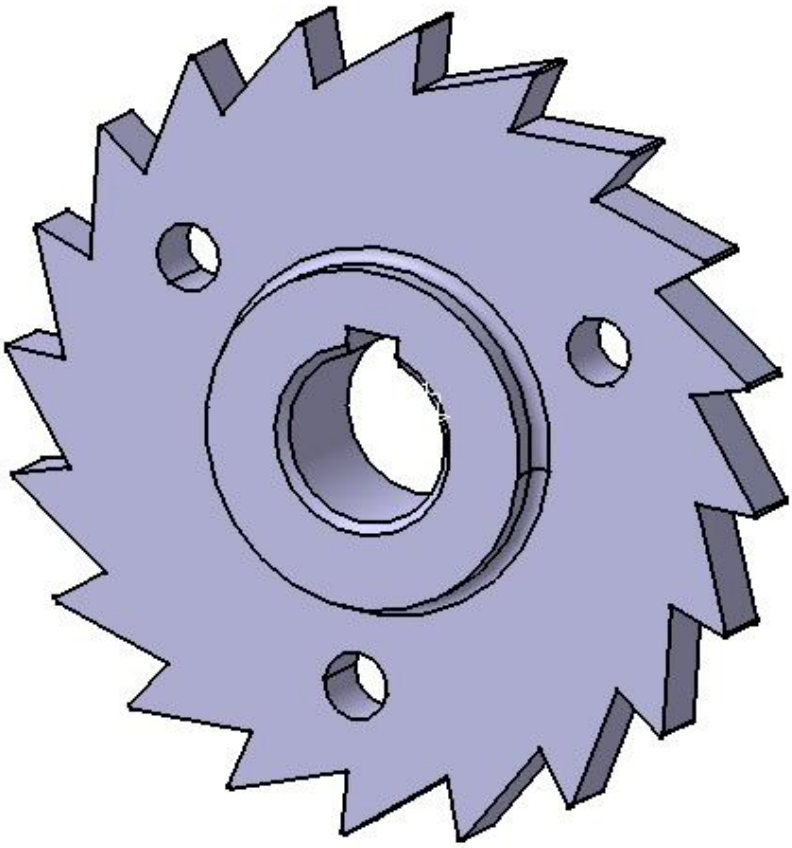


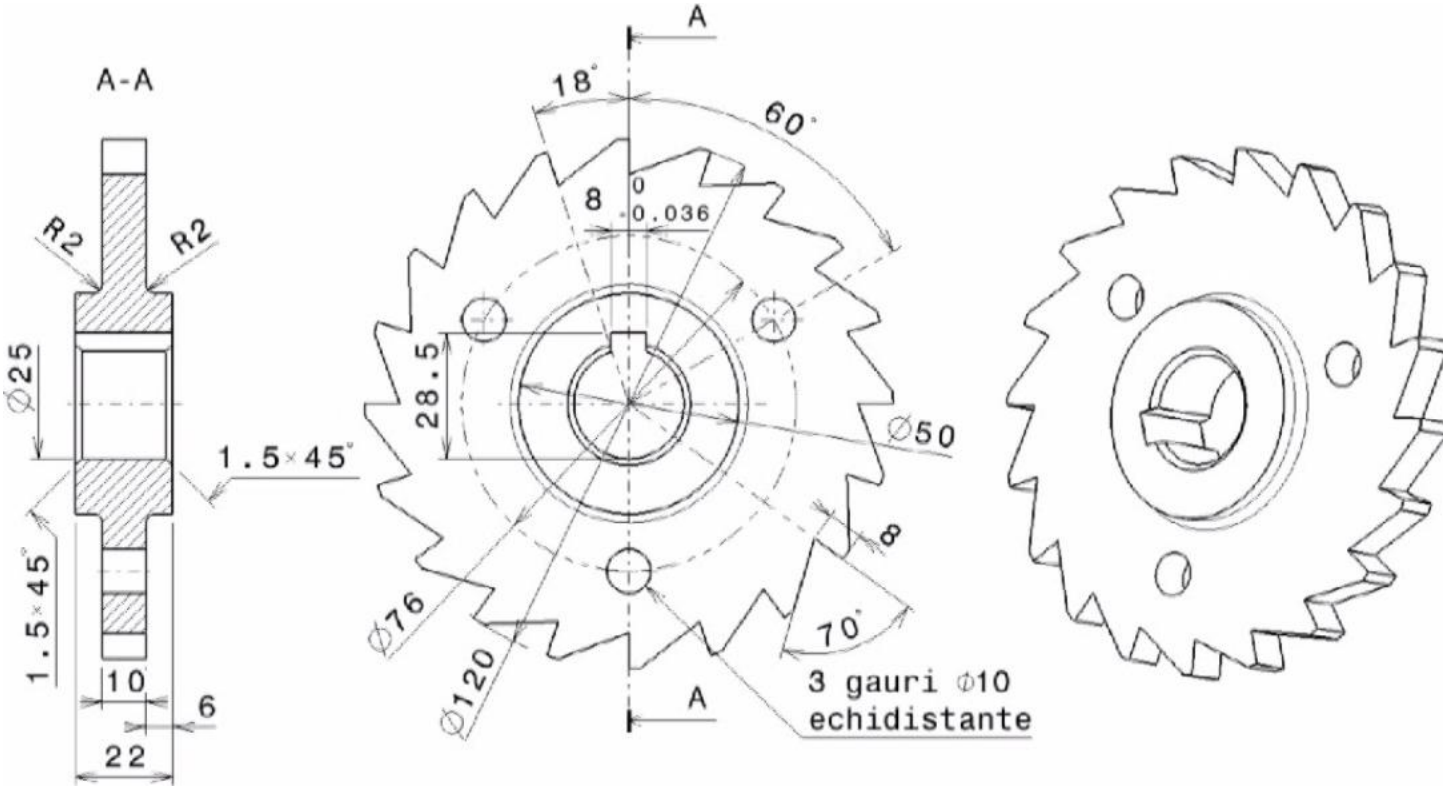
CATIA v5 software is used to modeling this object.

Prepared By
Veerapandian.K
Mechanical Engineering.

For video tutorial click the link
https://www.youtube.com/watch?v=Me67MYvTZ_0

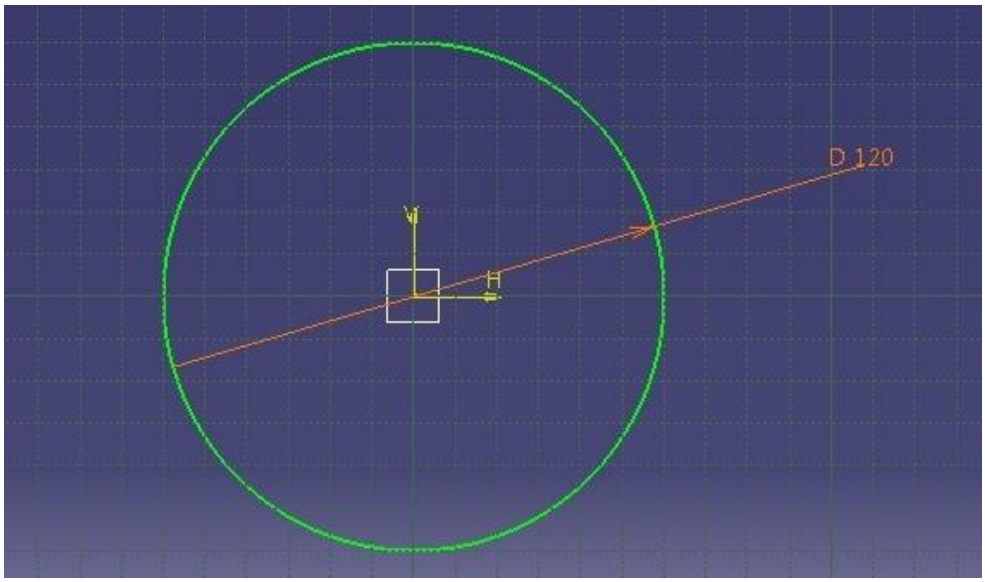
RATCHET wheel DIAGRAM WITH DIMENSIONS



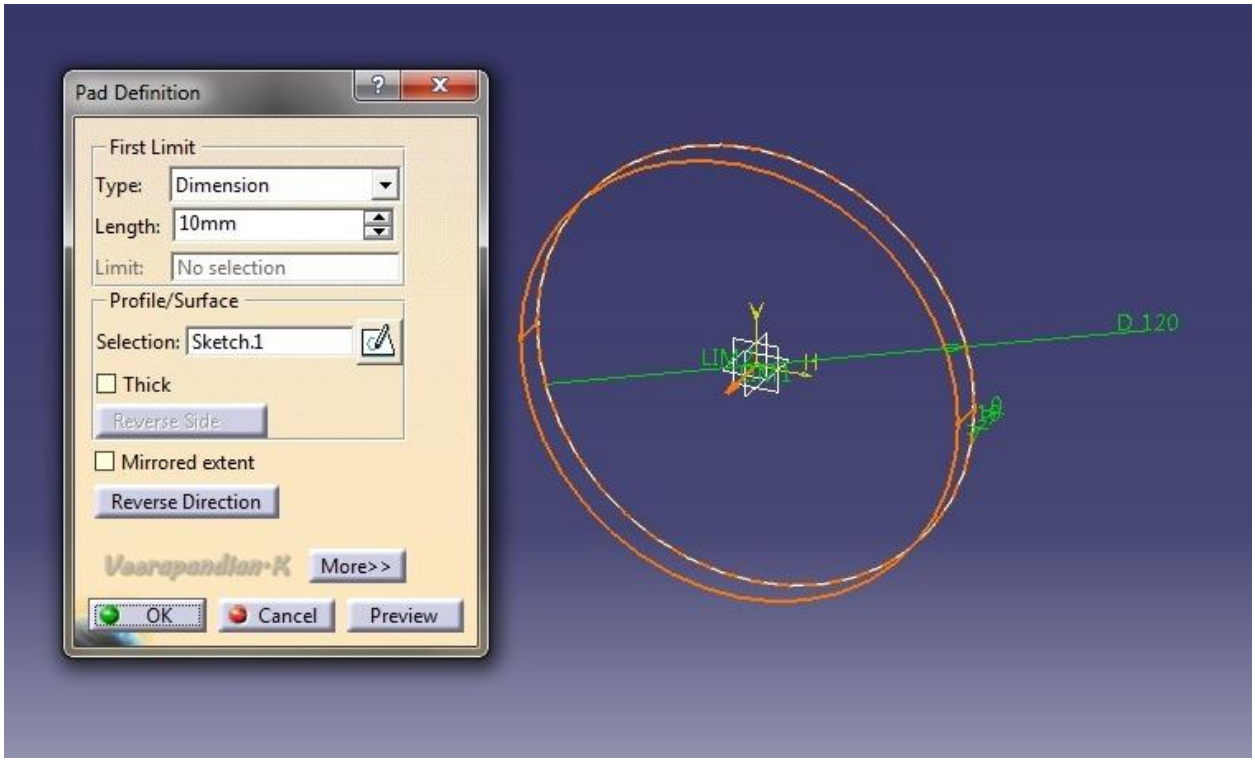


WORKING STEPS

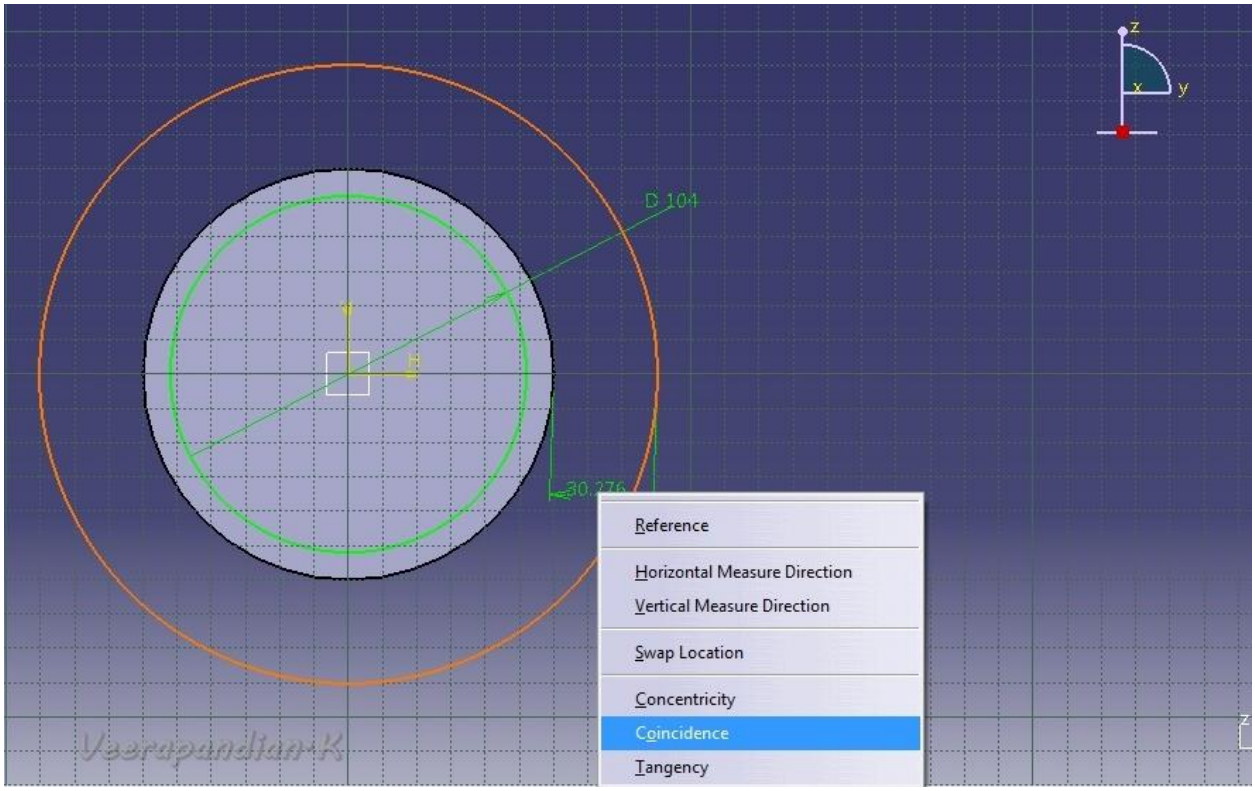
- ✓ Open the CATIA software.
- ✓ Start/mechanical design/part design.
- ✓ Select the suitable plane, select the sketch icon.
- ✓ After selection of selection the plane rotates to normal.
- ✓ Draw the circle with diameter of 120mm.



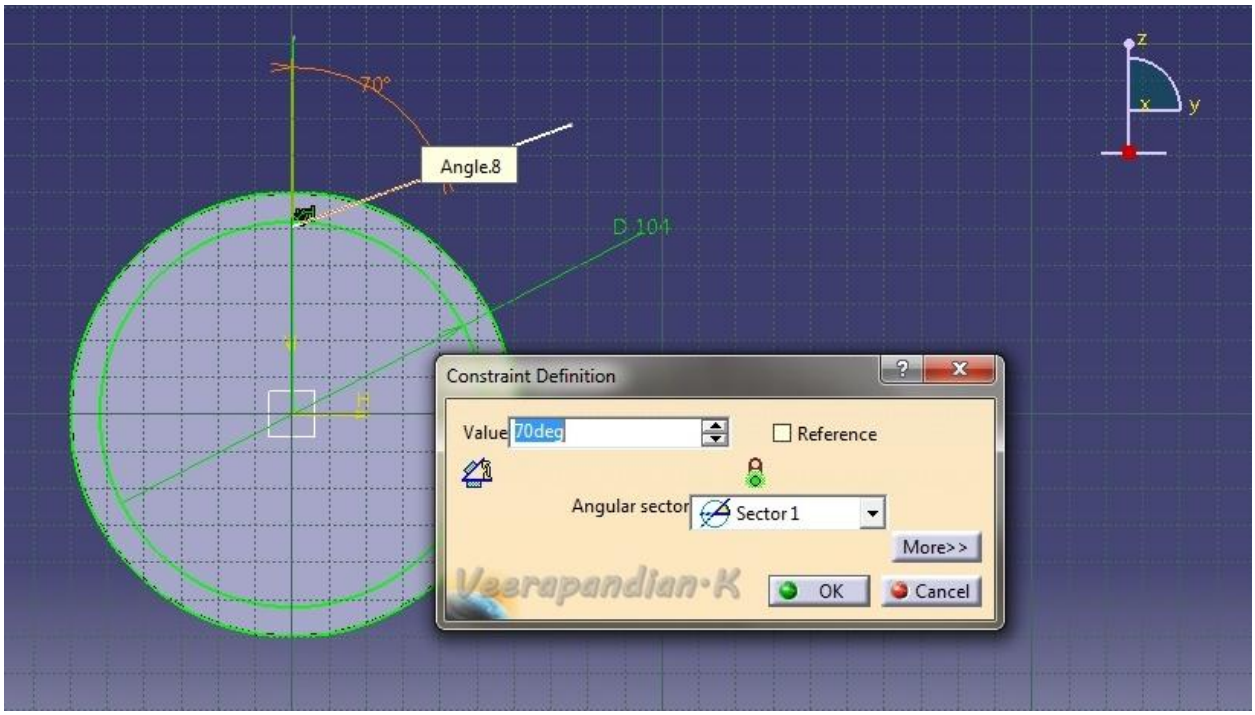
- ✓ After circle completion give exit work bench.
- ✓ Then put pad for 10mm length.



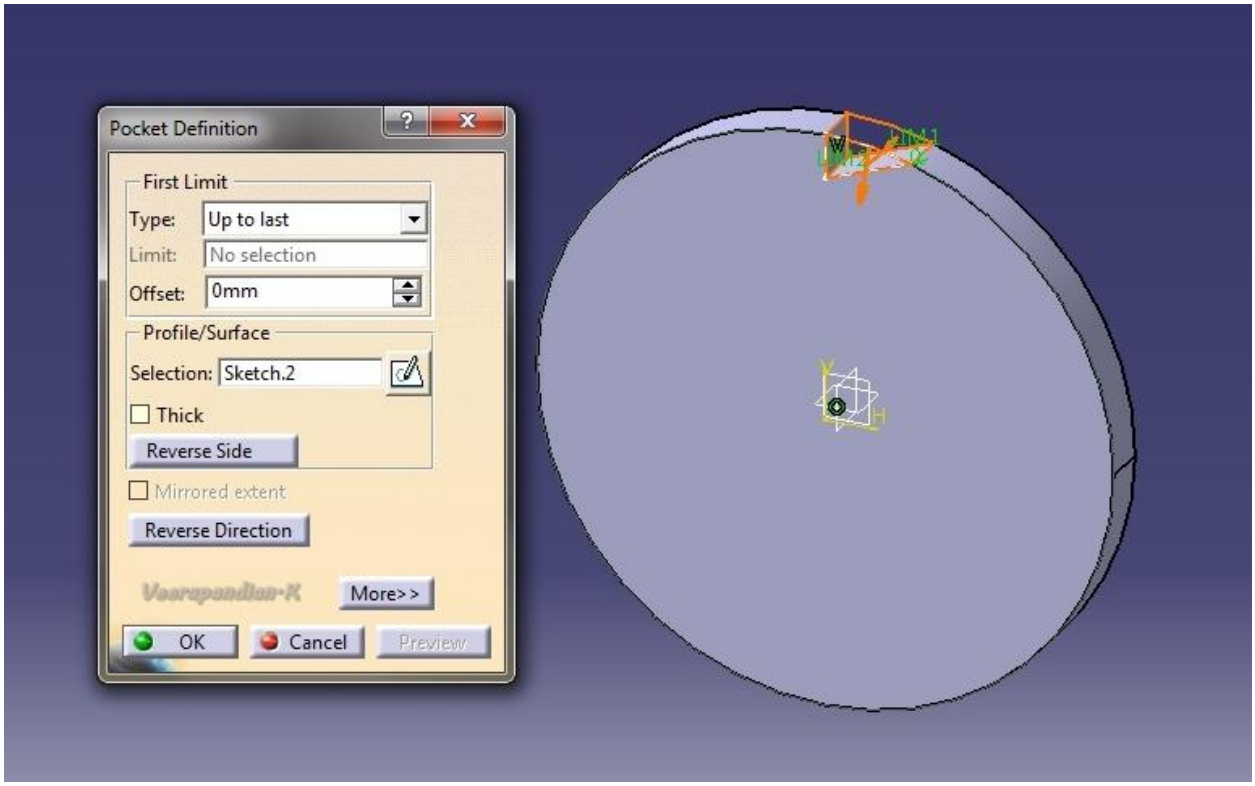
- ✓ Select the face of the circle to draw another more circle on the pad circle already exist.
- ✓ Draw circle again for 120mm diameter. Then draw a circle 104mm.



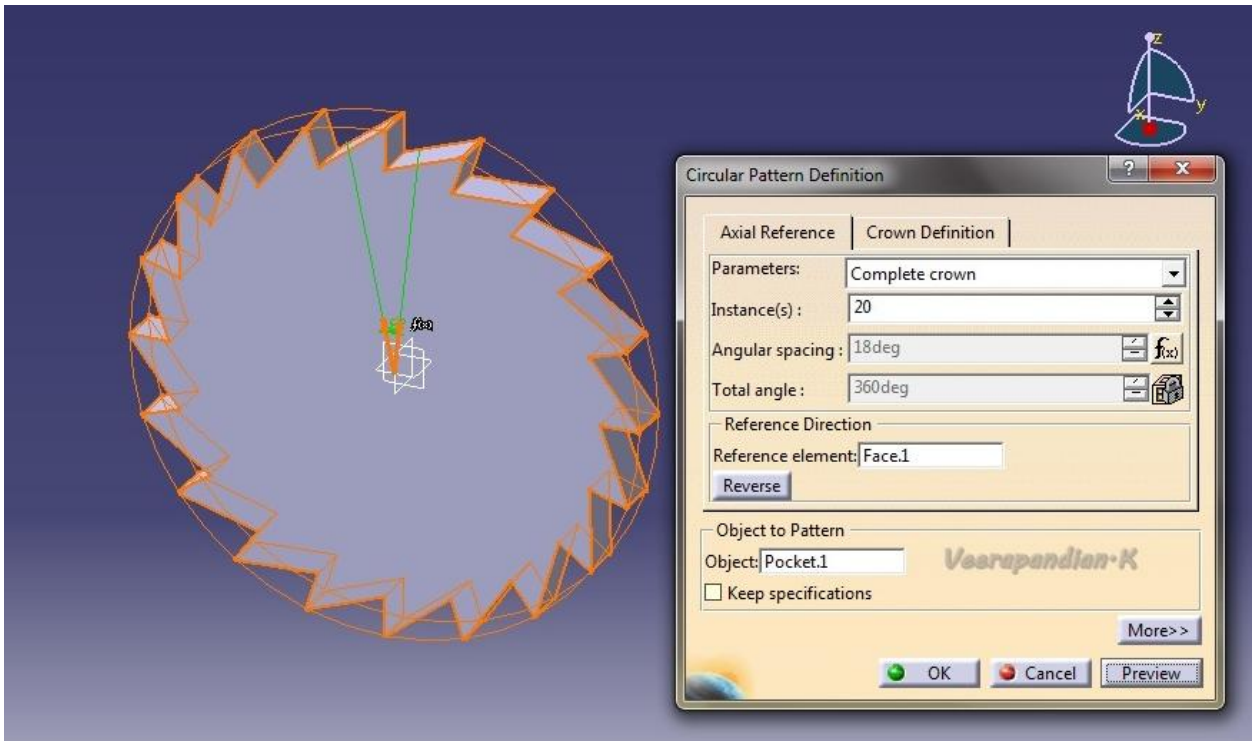
- ✓ Draw the line from centre of the circle.
- ✓ Draw another one line cross from inner circle. Put 70 degree angle for that line.
- ✓ Trim the all excess portion.



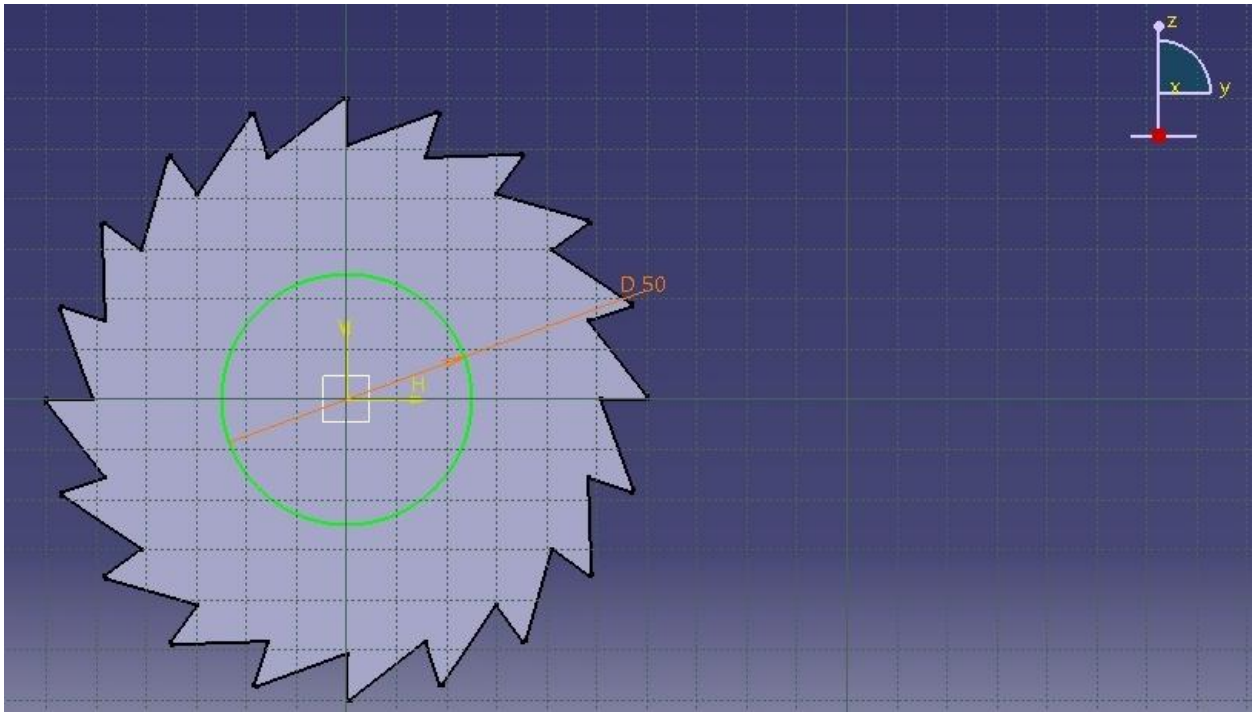
- ✓ Pocket the profile of crown structure.



- ✓ After completing the pocket select pocket to crown.
- ✓ Pick the circular pattern then give instance 20.
- ✓ Preview the component.

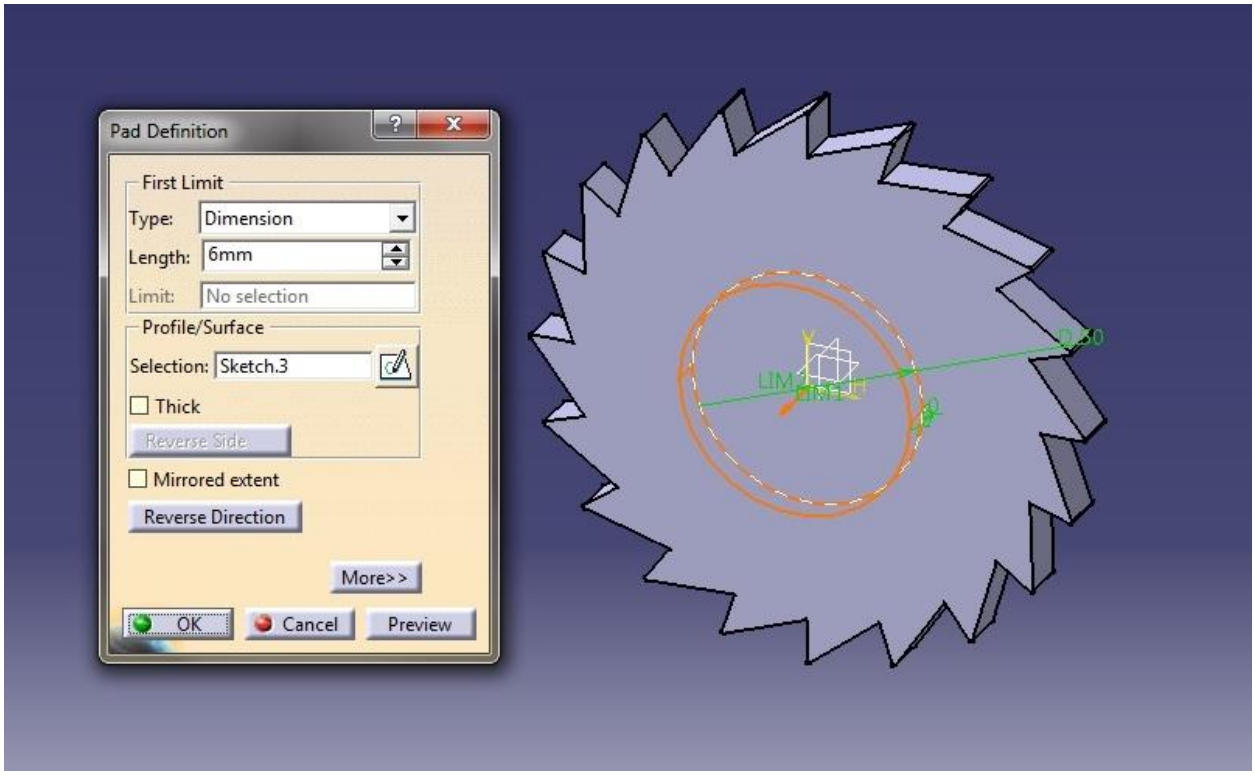


✓ Then select the face of the ratchet wheel, draw a circle to 50mm diameter.

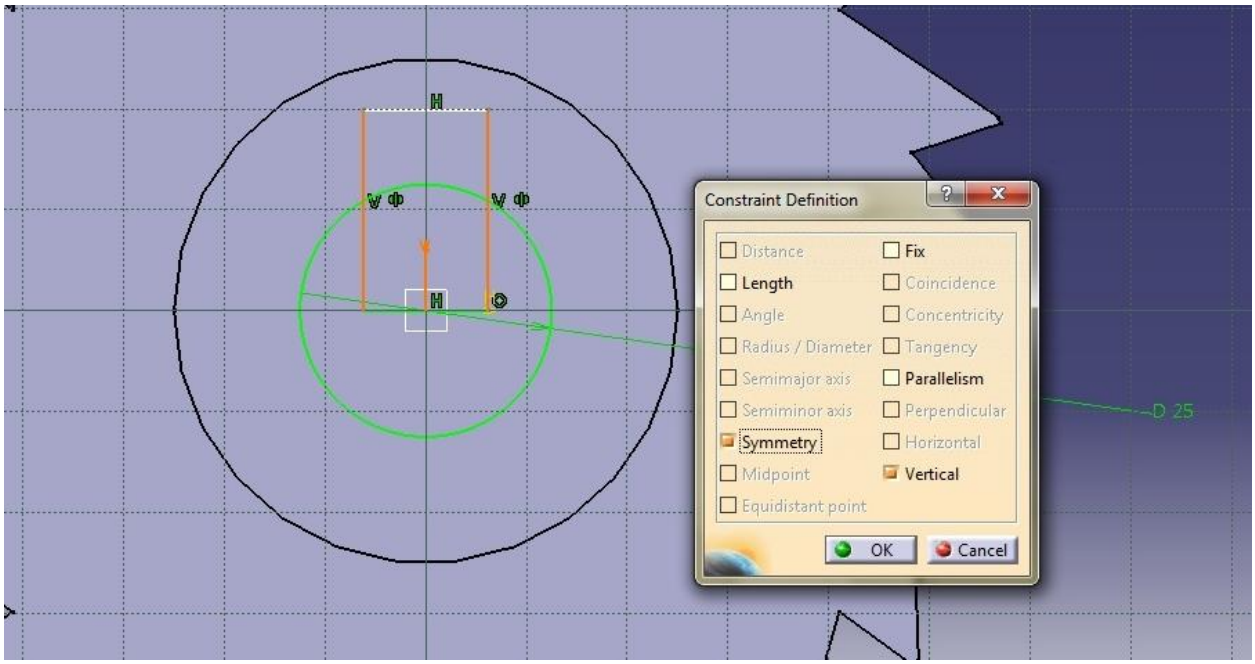


✓ Put pad definition for the circle to 6 mm.

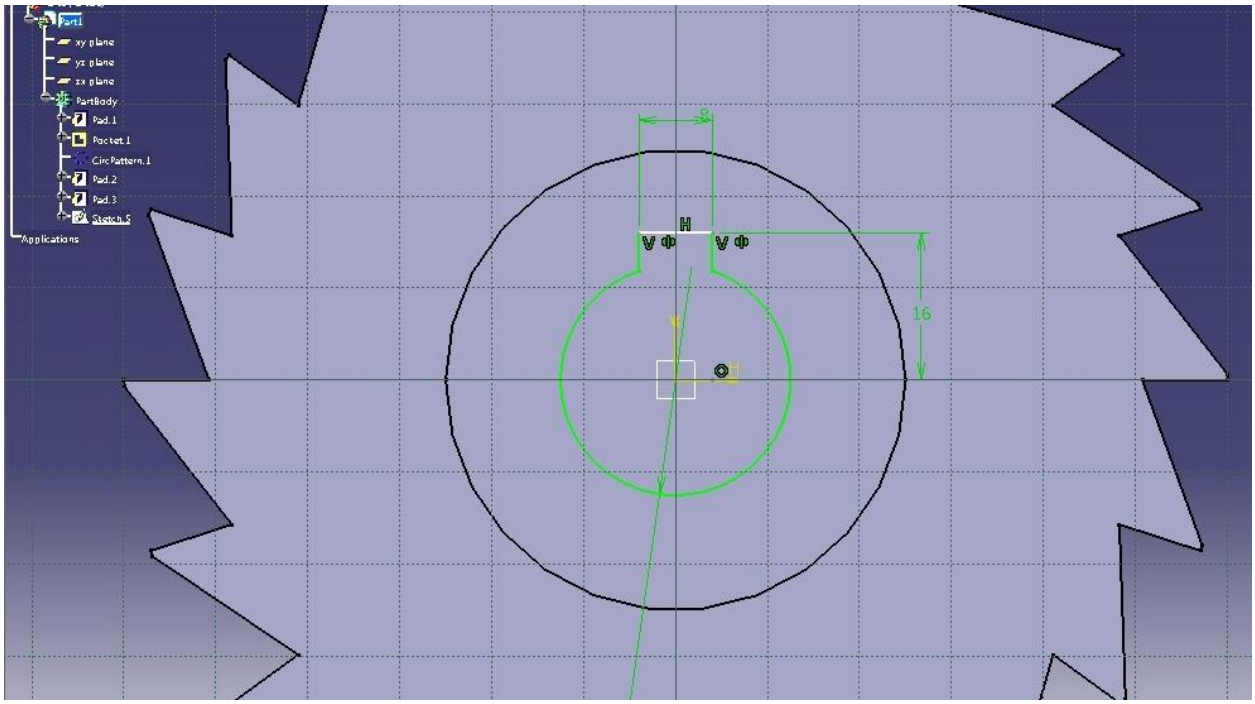
✓ Do this action for another face of the circle.



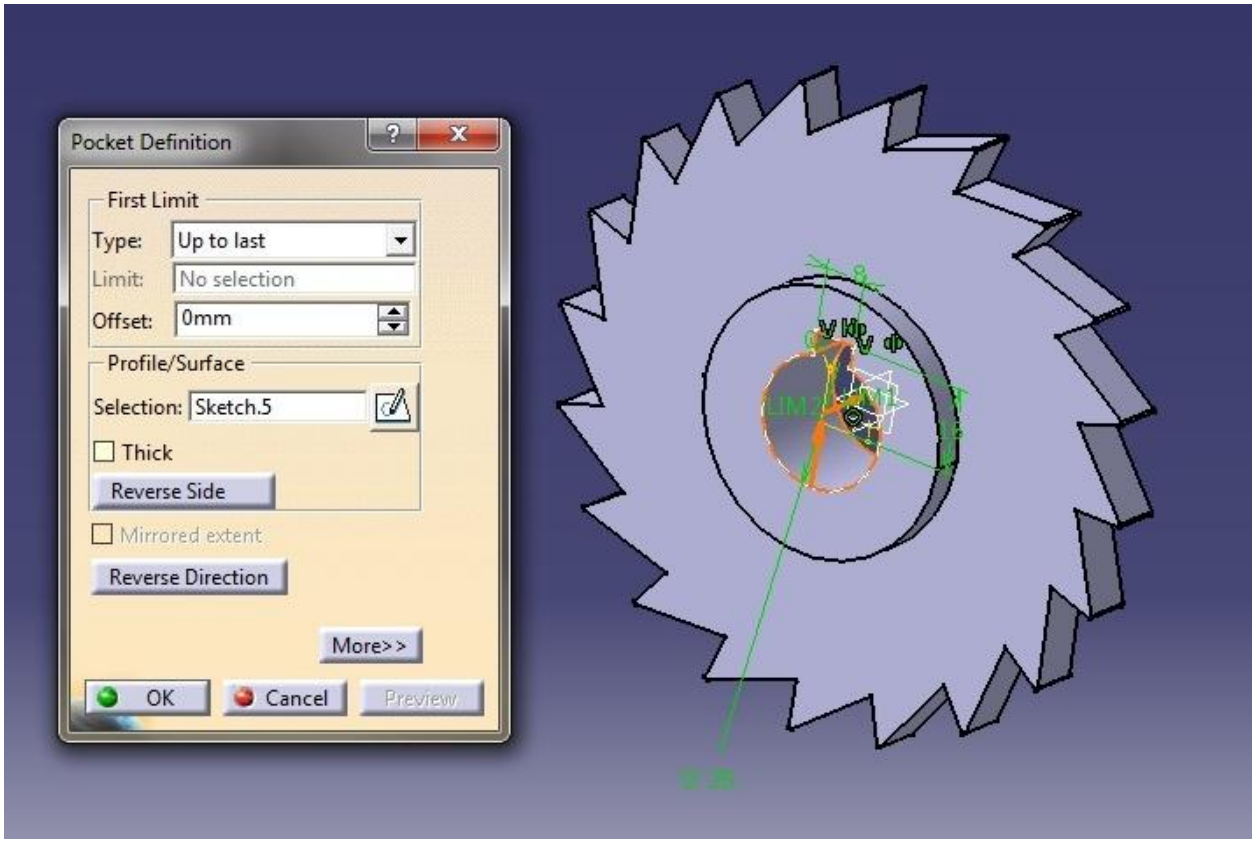
- ✓ Then select the face of the circle draw again a circle to 25mm diameter.
- ✓ Draw the rectangle put symmetry. Give dimensions as per diagram.



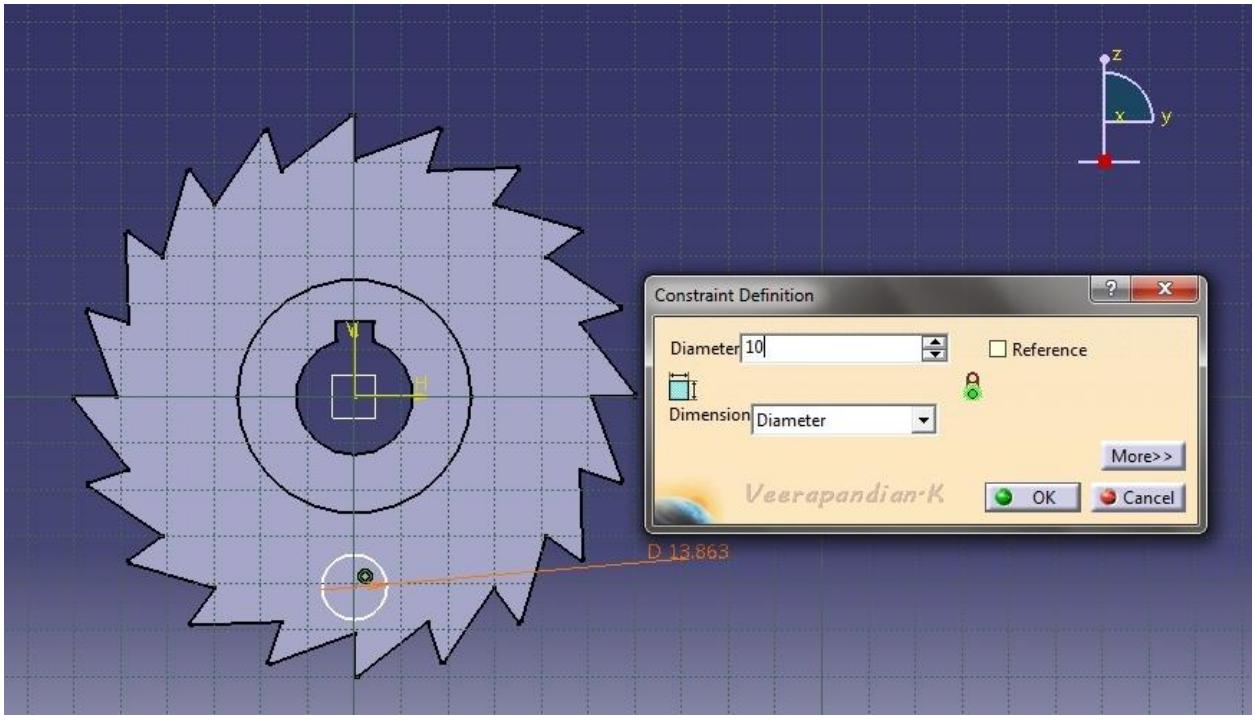
- ✓ Trim the unwanted portions.



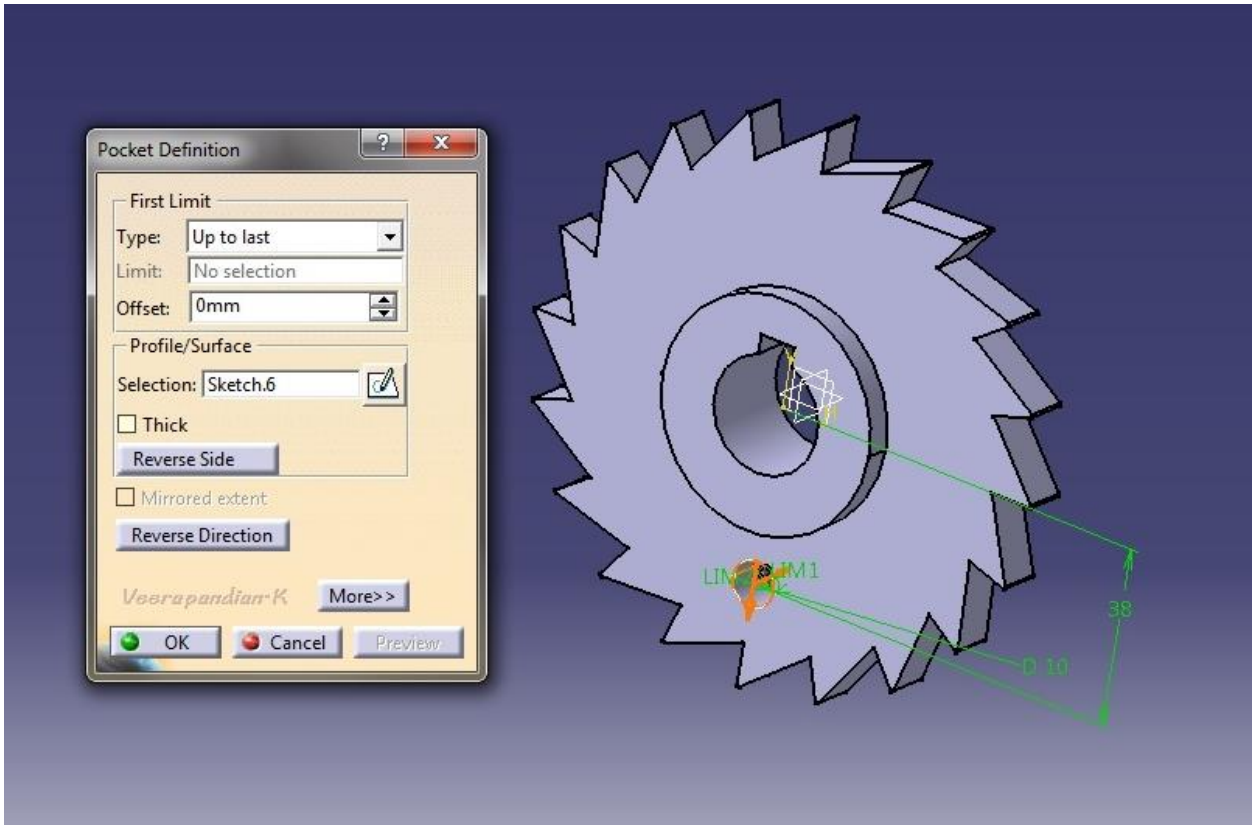
✓ After trim the element select exit work bench, then give pocket definition.



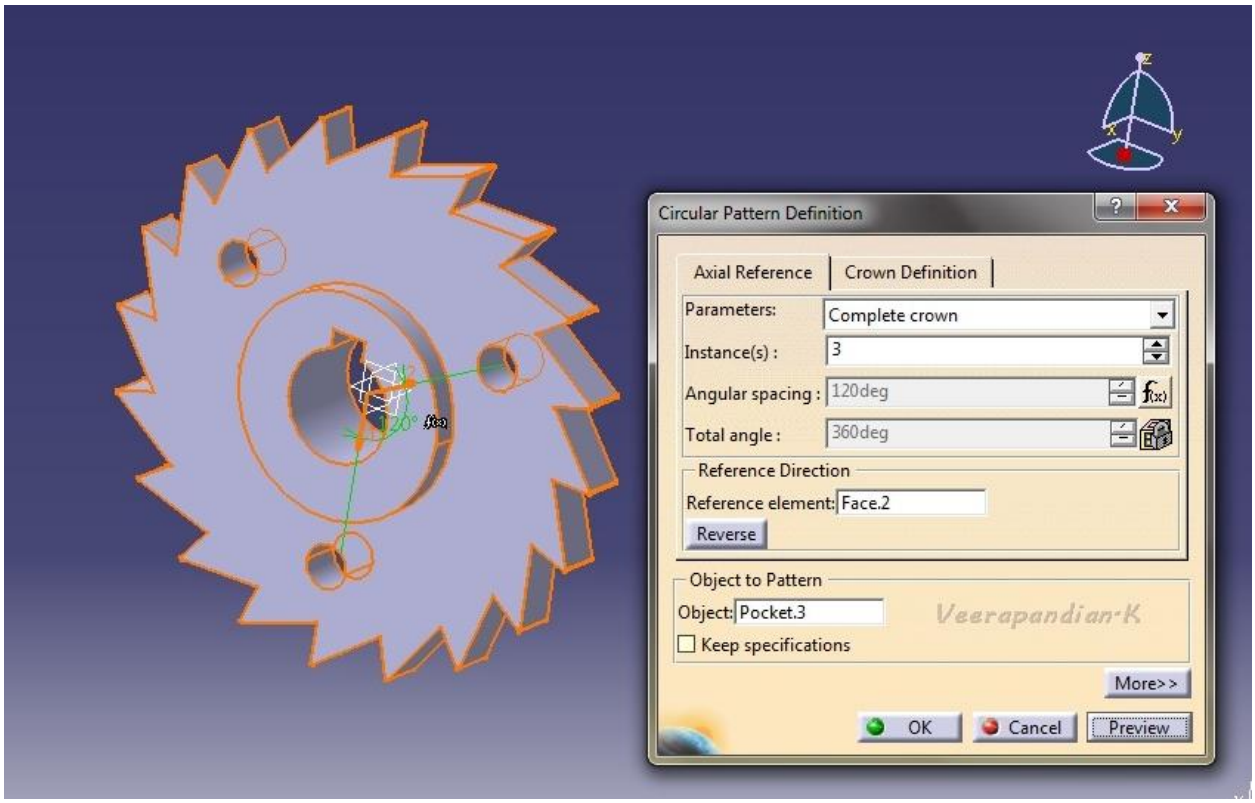
✓ Draw a circle 10mm diameter.



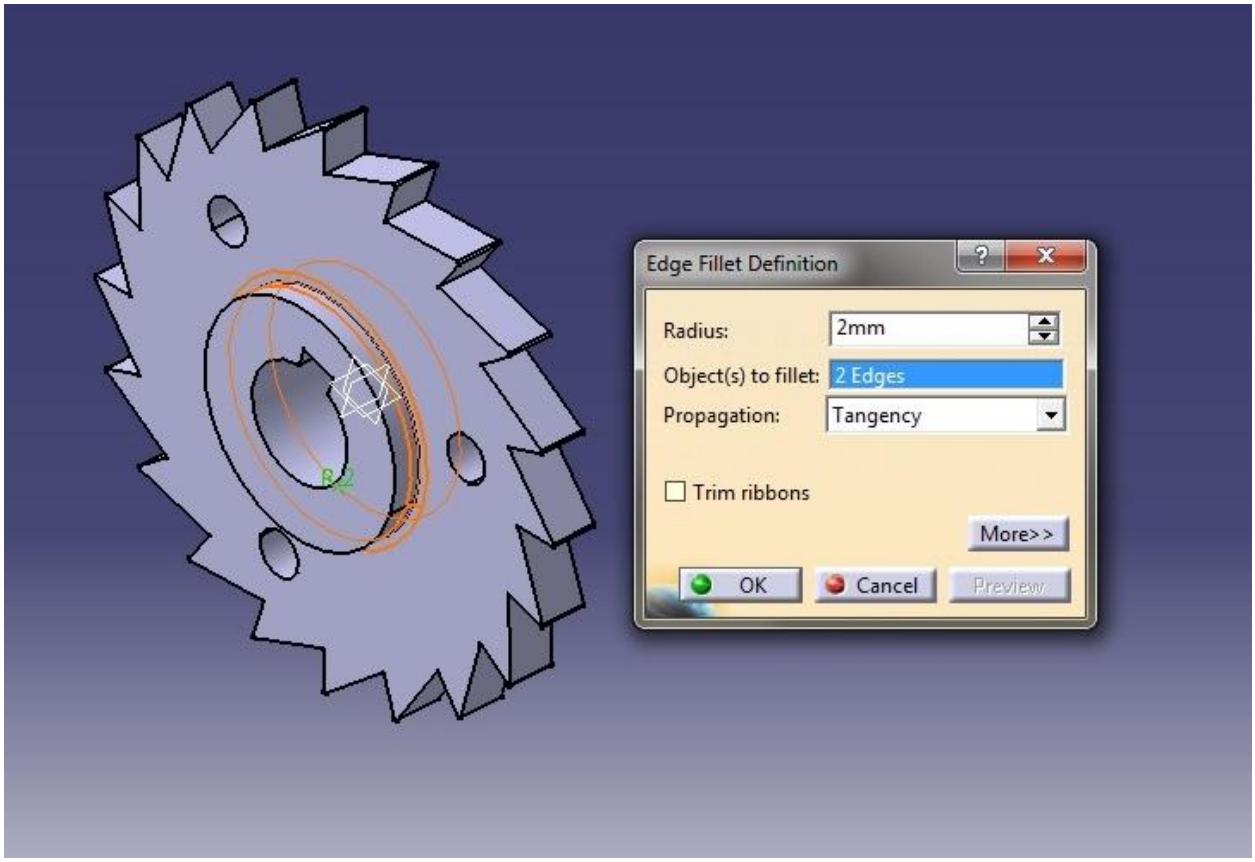
✓ Circle distance between centre of the main element is 38mm.



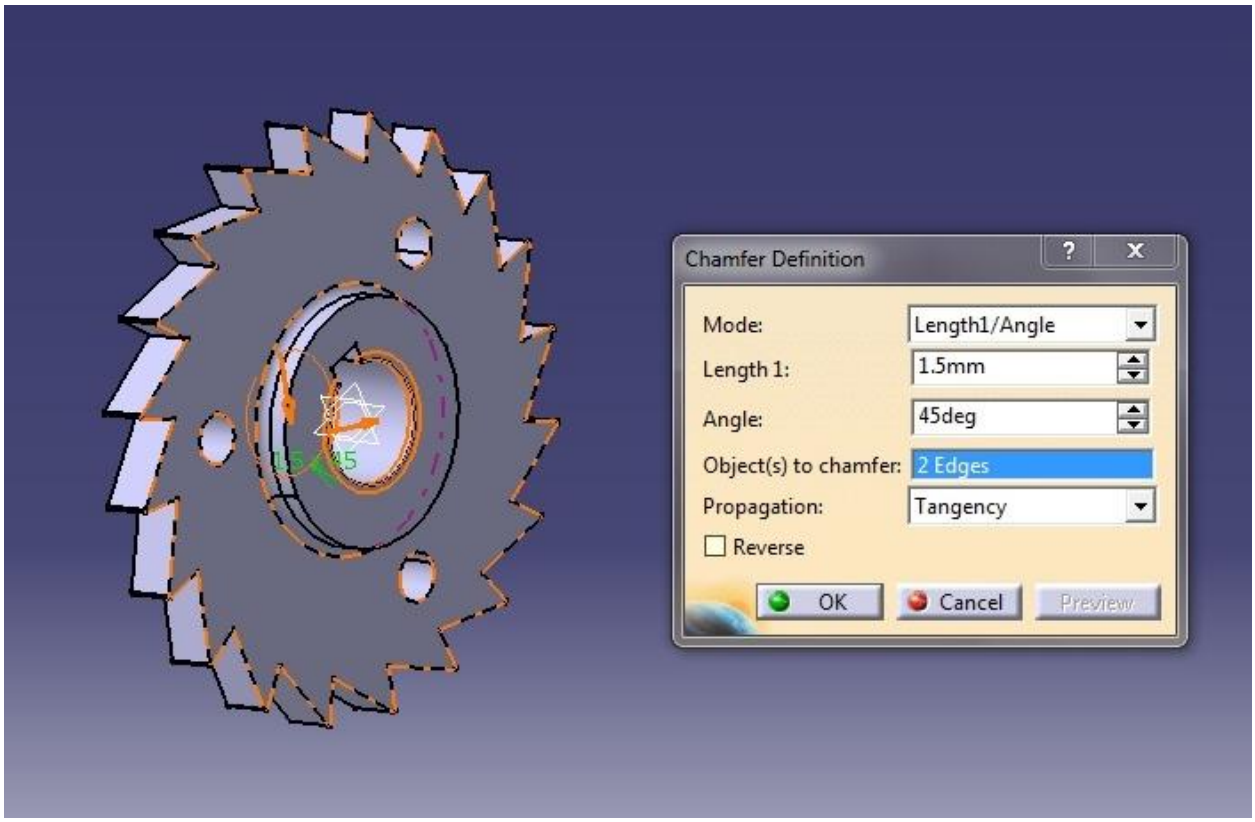
✓ Put circular pattern give complete crown for 3 instances.

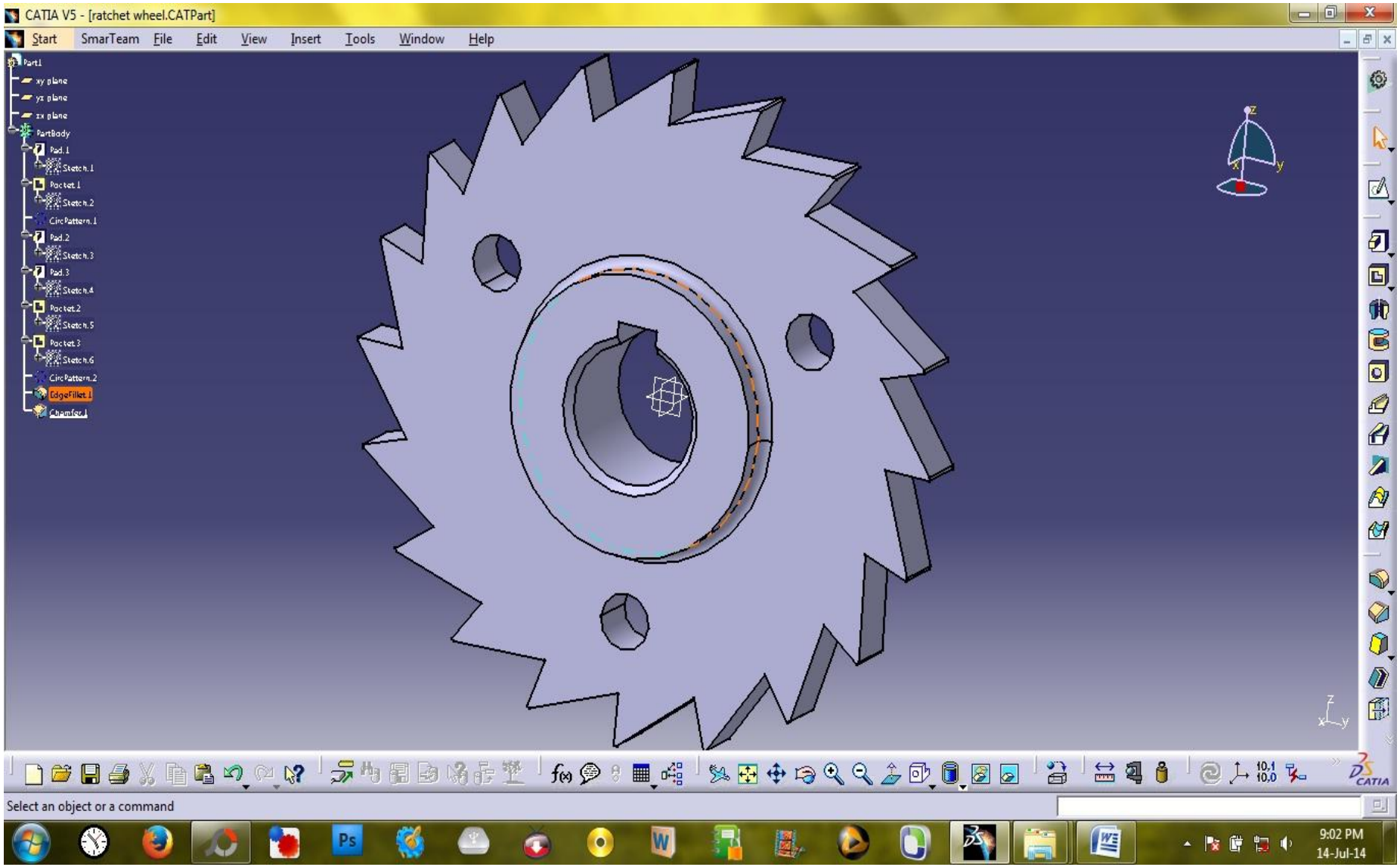


✓ Sketch the fillet on the inner edge of the circle.



✓ Put the chamfer for 1.5mm length.




CATIA V5 - [ratchet wheel.CATPart]
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File
Edit
View
Insert
Tools
Window
Help
Part1
xy plane
yz plane
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PartBody
Pad.1
Sketch.1
Pocket.1
Sketch.2
CircPattern.1
Pad.2
Sketch.3
Pad.3
Sketch.4
Pocket.2
Sketch.5
Pocket.3
Sketch.6
CircPattern.2
EdgeFillet.1
Chamfer.1
Select an object or a command
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14-Jul-14