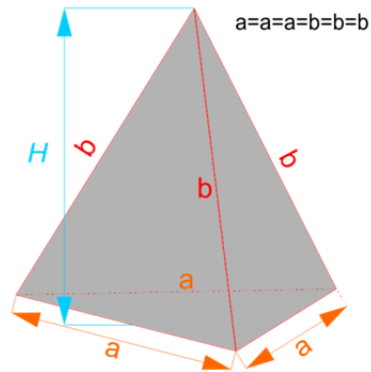
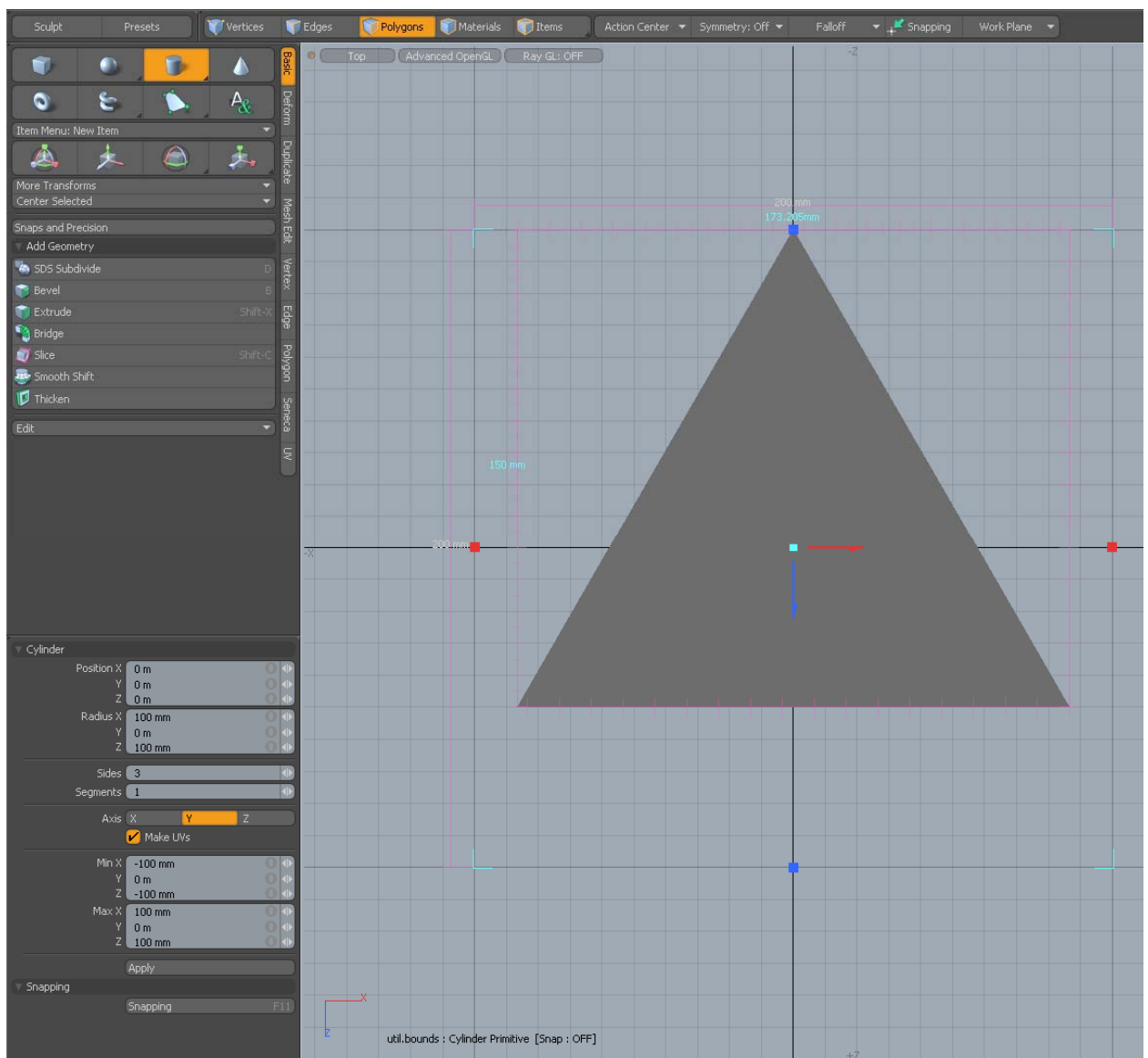


How build Tetrahedron

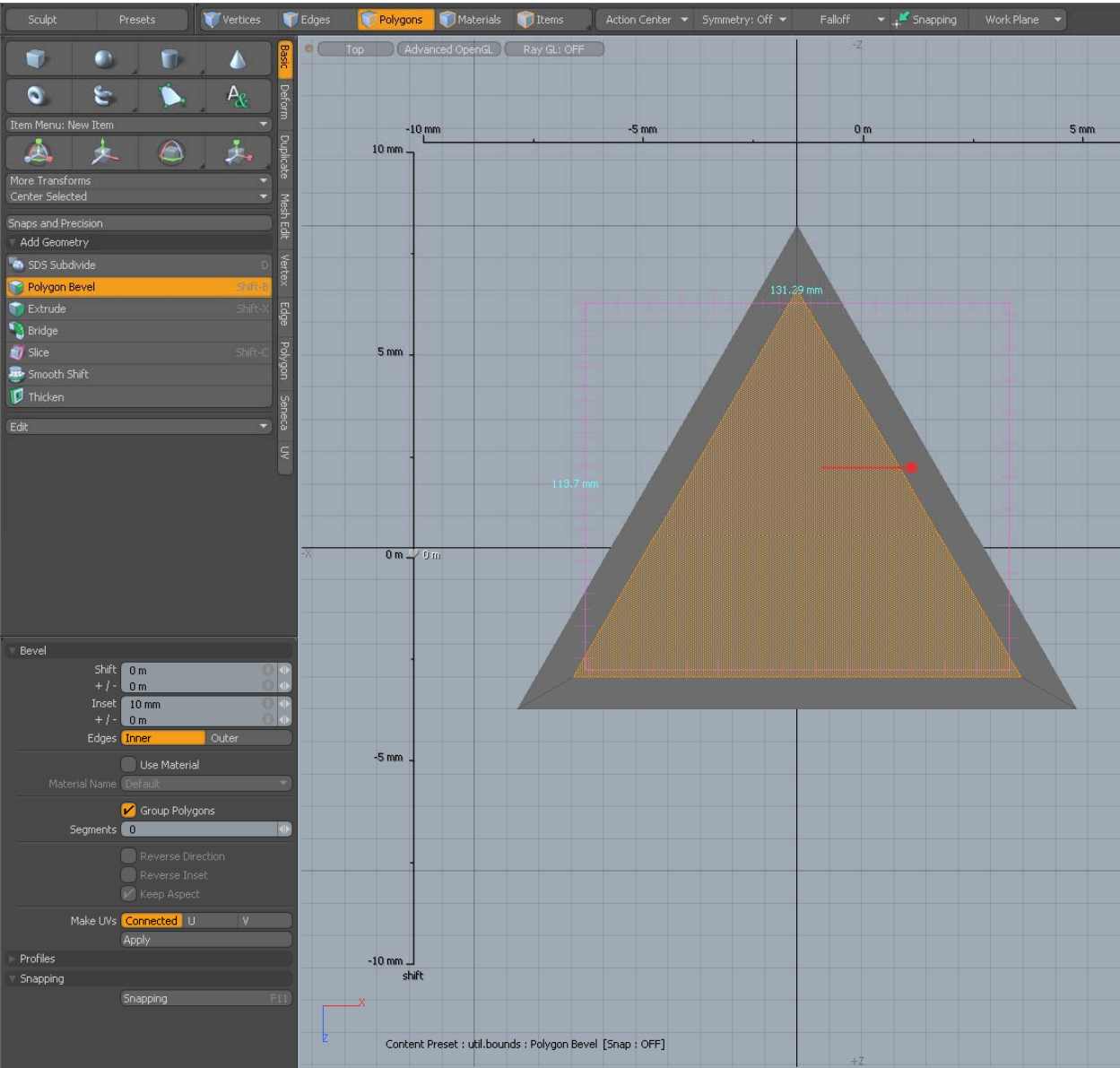
Tetrahedron – platonic solid body have vertices 4, edges 6, faces 4.



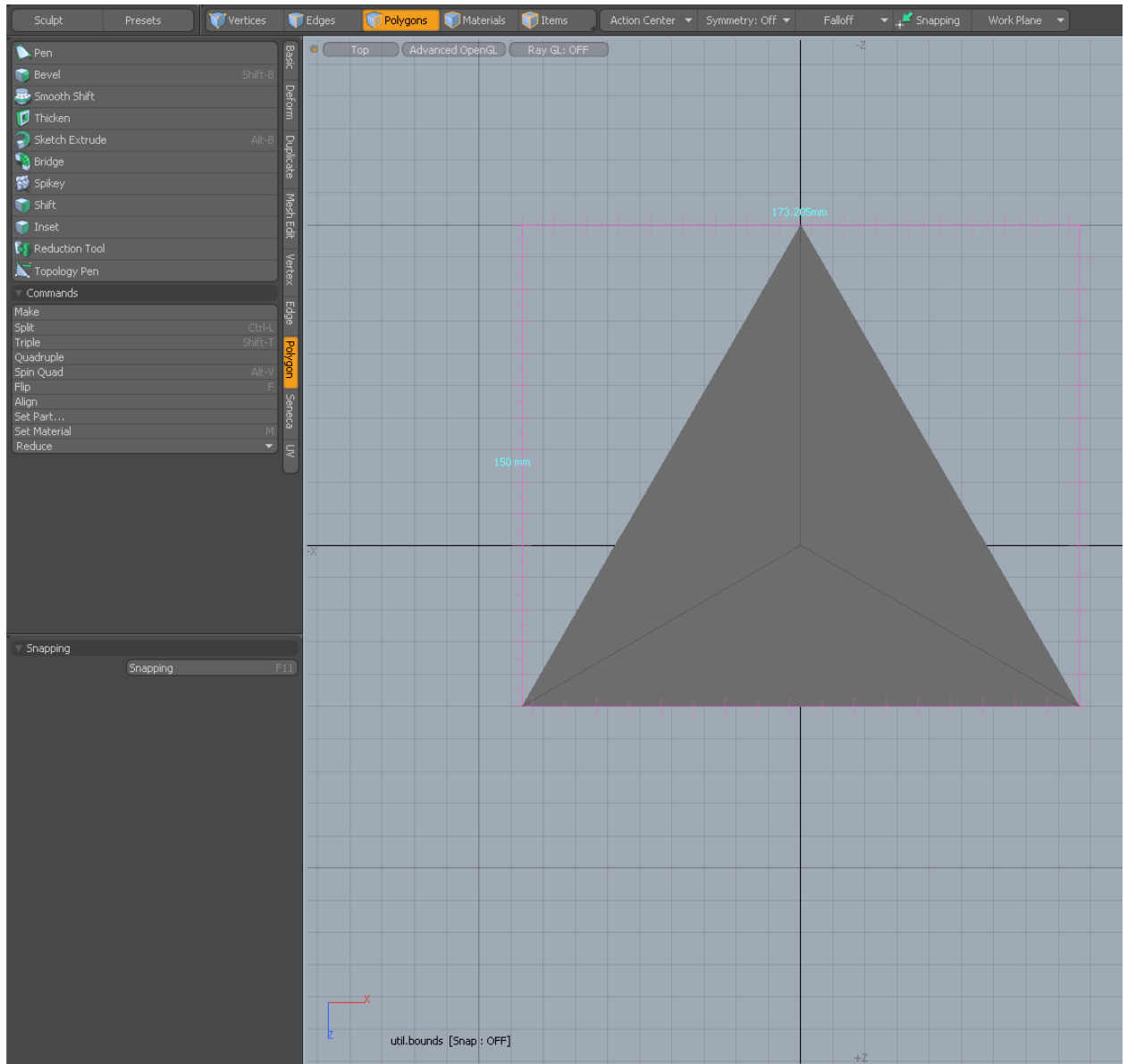
Create cylinder radius 100*100 mm with 3 sides



Select polygon, use bevel tool and collapse this



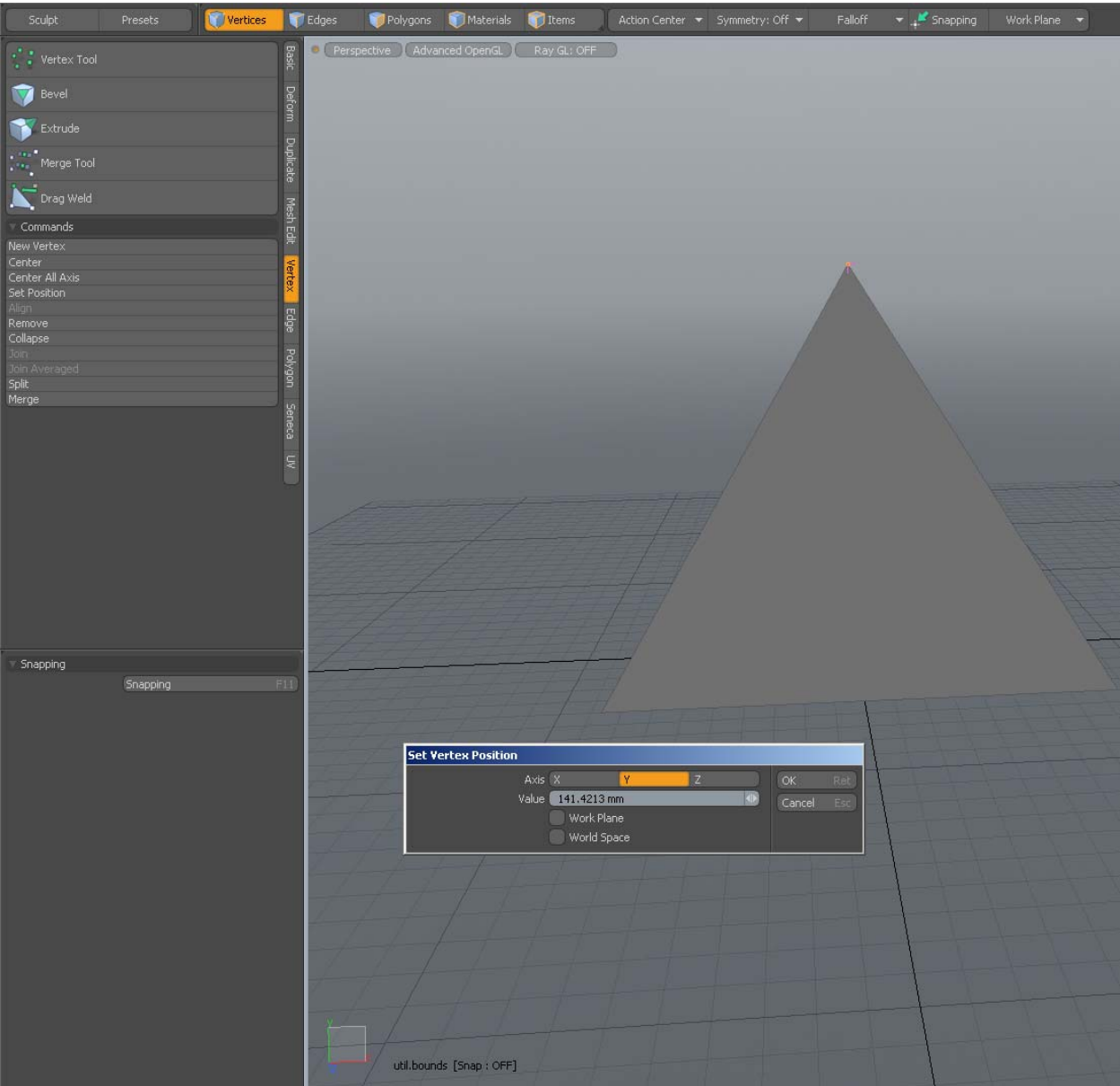
We have center point in 0-0-0 coordinate, ready for calculation



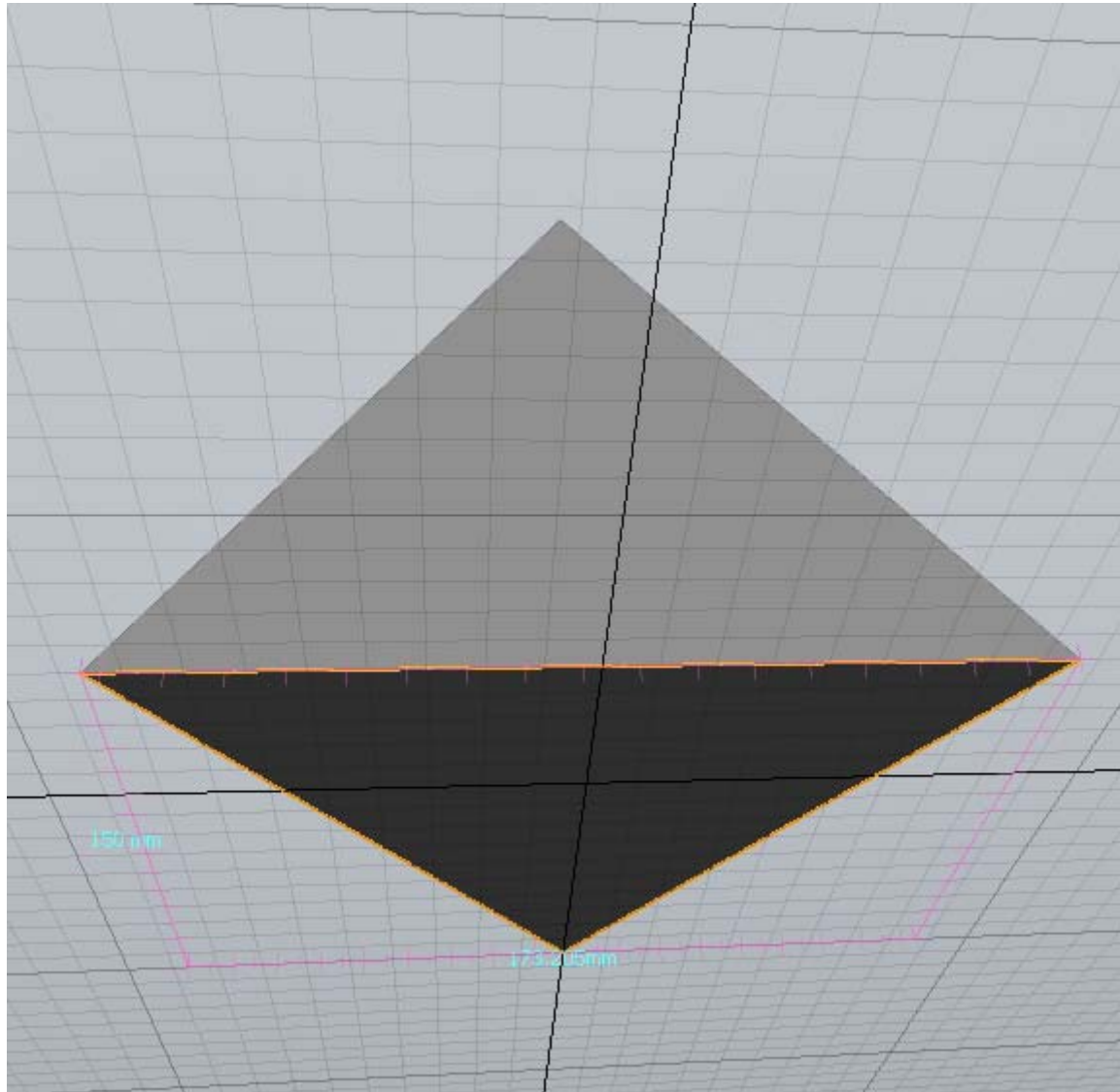
Every edges have 173.205 mm length. (this in formula set as a). If go to wiki, we see formula height

$$\text{tetrahedron } H = \frac{\sqrt{6}}{3} a = \frac{2.44948974278}{3} 173.205 = 141.421290298 \text{ mm.}$$

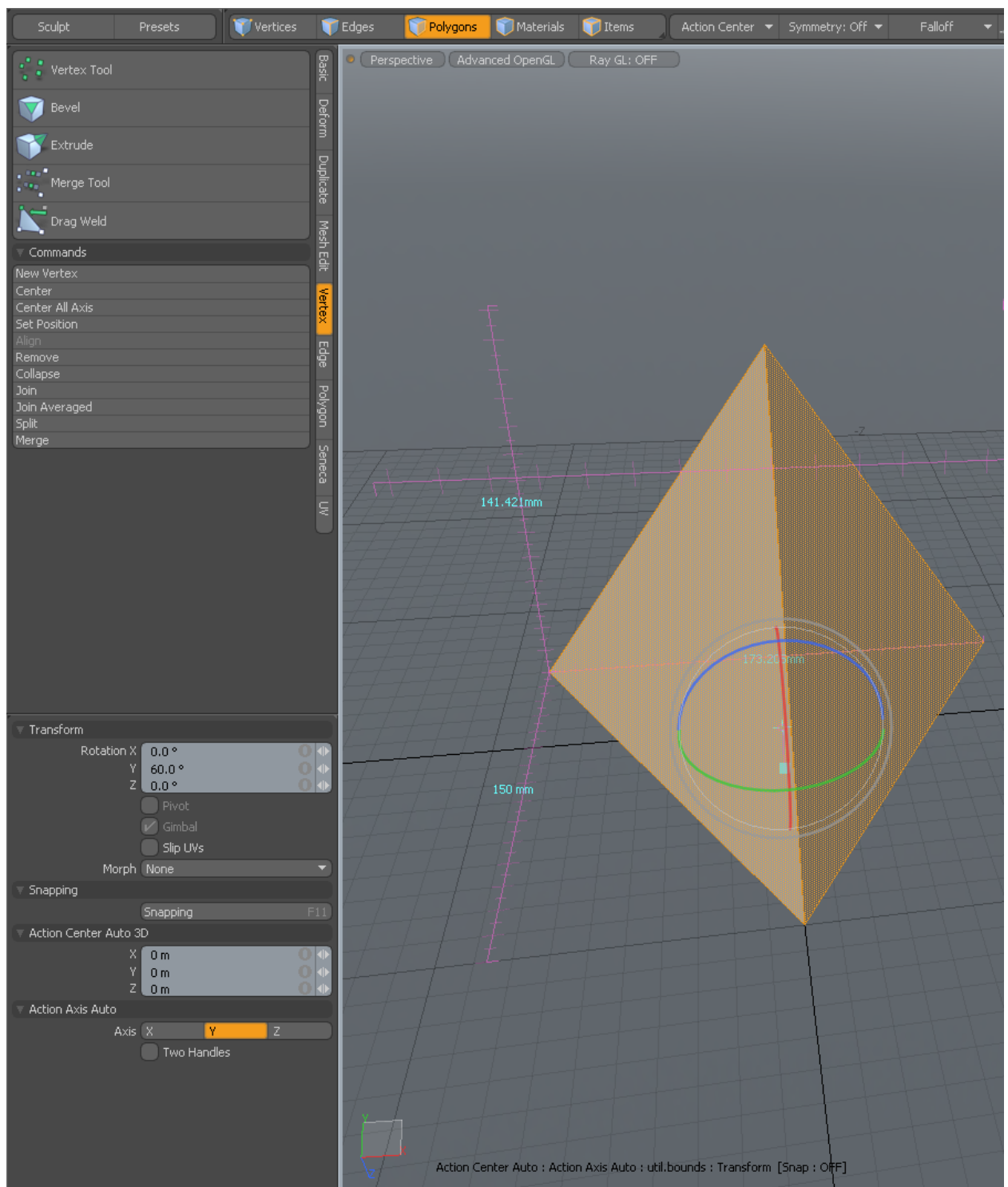
Select central vertex and set new position.



Select bottom edges and press P key for create cap polygon.



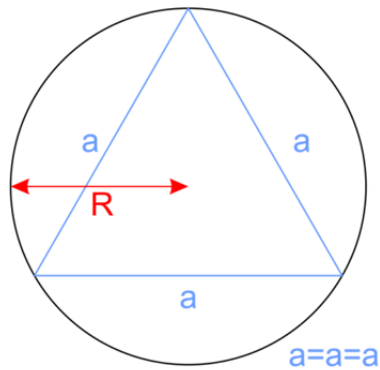
Select all polygons and activate action center. Set all value in action center as 0-0-0, rotate this on Y axis to 60°



Deselect polygons and all ready.

Second method

Build of the primitive cone



(for calculate bottom edges length)

Sample $a = 100$ mm (edge length), need know radius $R = \frac{a}{\sqrt{3}} = \frac{100}{1.73205080756} = 57.7350269192$ mm (for XZ axis).

And need know H (width tetrahedron)

$H = \frac{\sqrt{6}}{3} a = \frac{2.44948974278}{3} \times 100 = 0.81649658092 \times 100 = 81.649658092$ mm. For cone primitive need $81.649658092 \div 2 = 40.824829046$ mm (for Y axis).

Write this parameters in fields:

Basic Deform Duplicate Mesh Edit Vertex Edge Polygon Seneca UV

Item Menu: New Item

More Transforms
Center Selected

Snaps and Precision
Add Geometry

SDS Subdivide D
Bevel B
Extrude Shift-X
Bridge Shift-C
Smooth Shift
Thicken

Edit

Cone

Position X 0 m
Y 0 m
Z 0 m

Size X 57.735 mm
Y 40.825 mm
Z 57.735 mm

Sides 3
Segments 1

Axis X Y Z
☒ Make UVs

Min X -57.735 mm
Y -40.825 mm
Z -57.735 mm

Max X 57.735 mm
Y 40.825 mm
Z 57.735 mm

Apply

Snapping
Snapping F11

