

Modelação Geométrica e Generativa

20241159

NÚRIA GOMES



AULA. 1 – APRESENTAÇÃO DA DISCIPLINA



OPERAÇÕES GEOMÉTRICAS DE MOVIMENTO:

TRANSLAÇÃO: Paralelismo, dimensões iguais e mesmo sentido de leitura

ROTAÇÃO: Paralelismo não existe, dimensões iguais e mesmo sentido de leitura

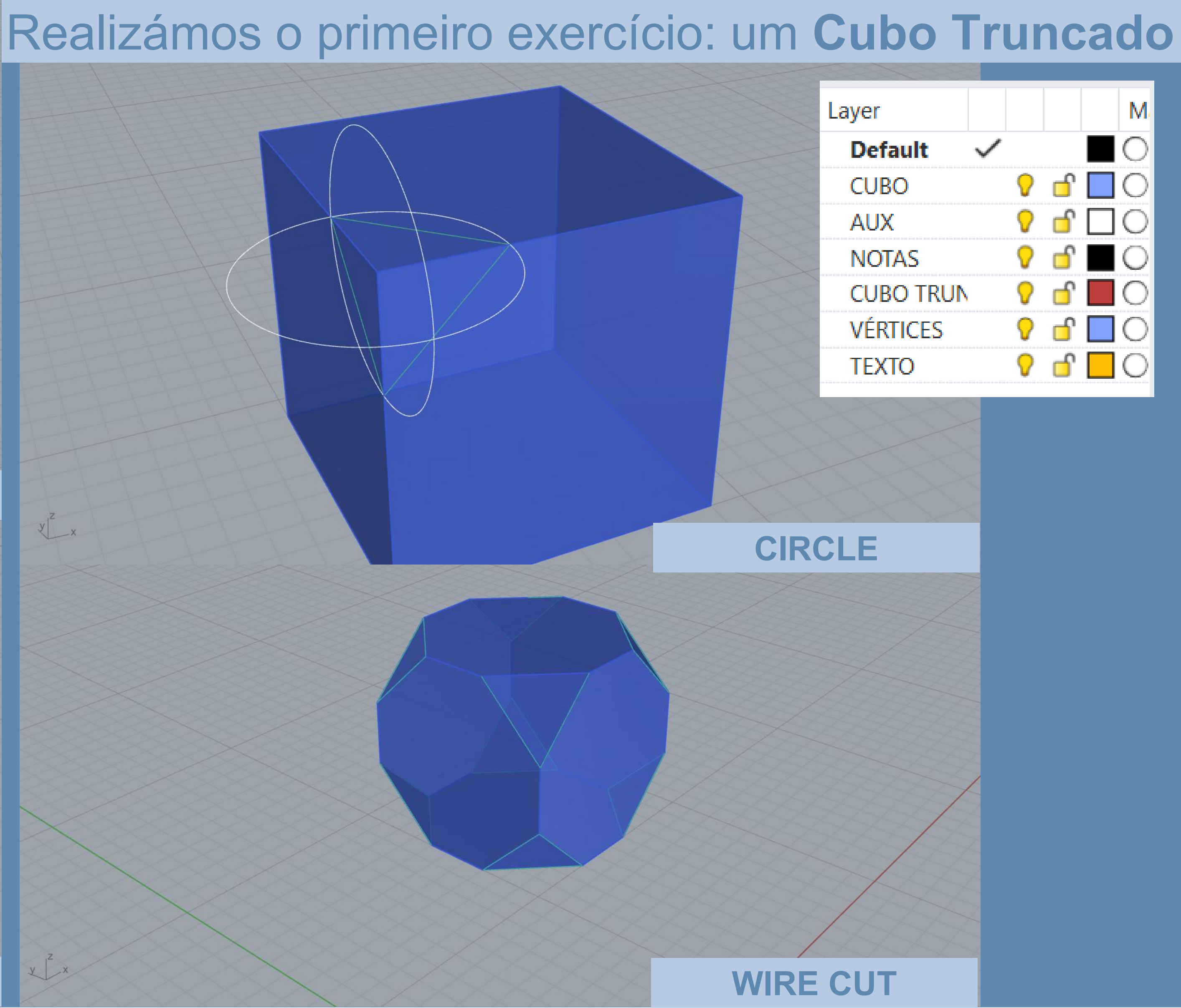
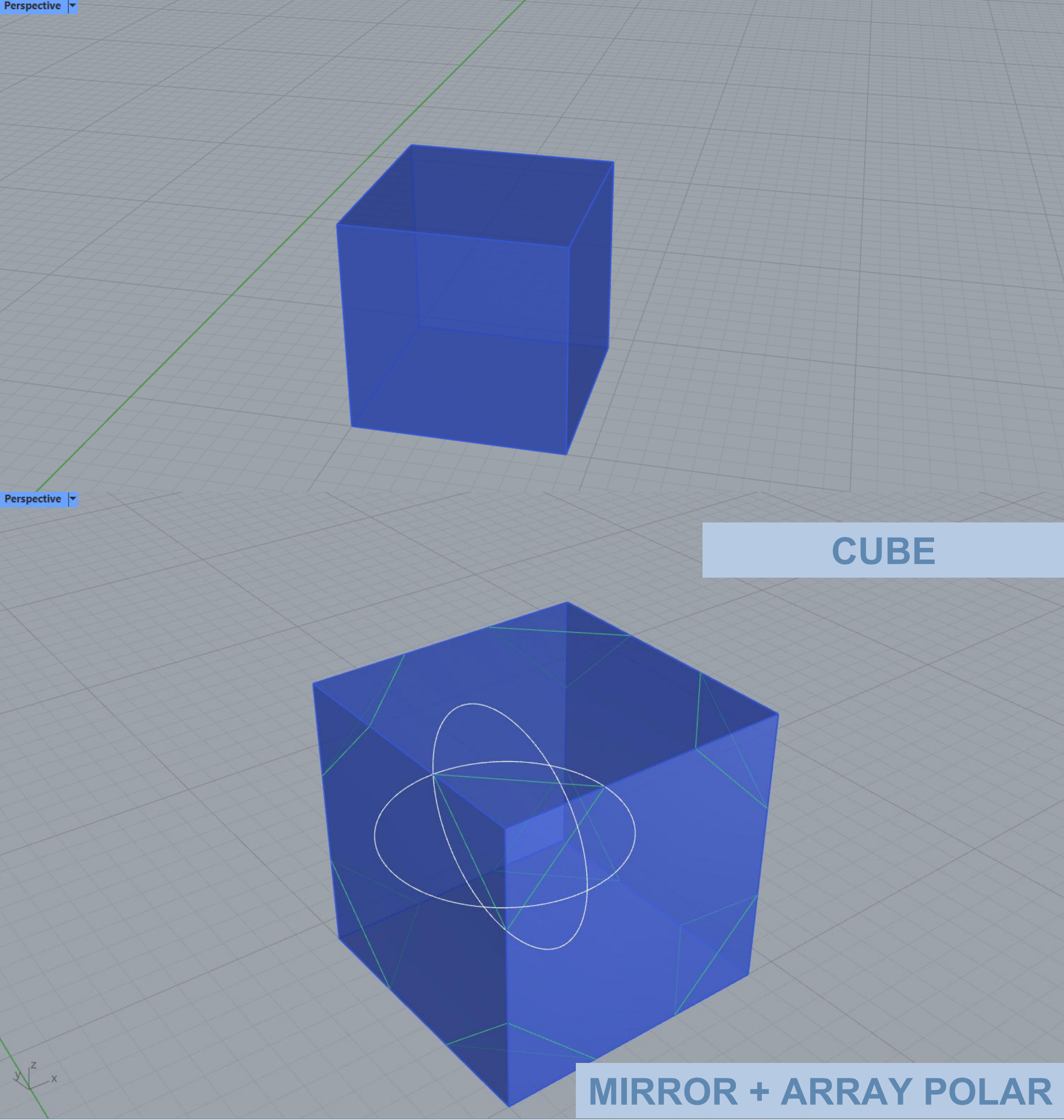
REBATIMENTO: Paralelismo não existe, dimensões iguais e mesmo sentido de leitura

REFLEXÃO: Paralelismo não existe, dimensões iguais e sentido de leitura inverso

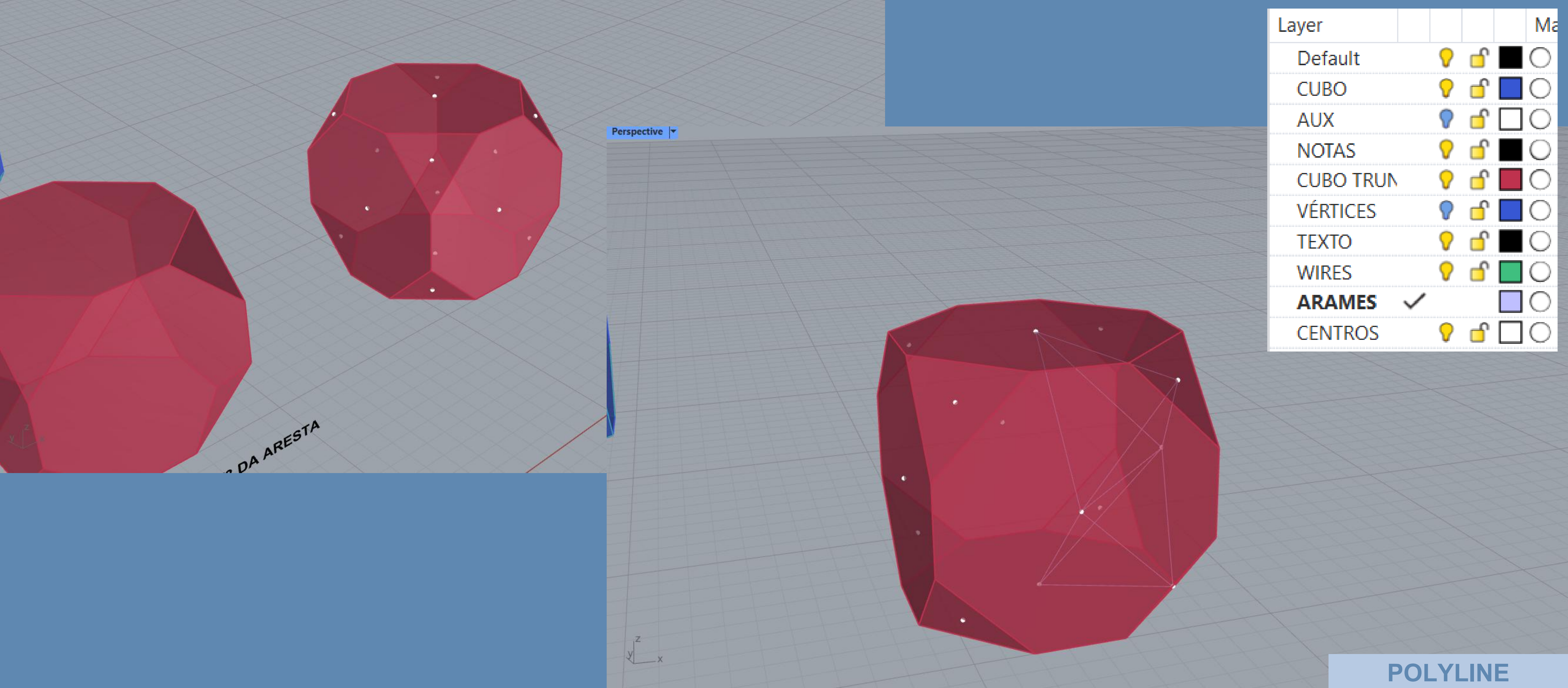
HOMOTETIA: Paralelismo, dimensões diferentes e mesmo sentido de leitura

AULA. 1- APRESENTAÇÃO DA DISCIPLINA

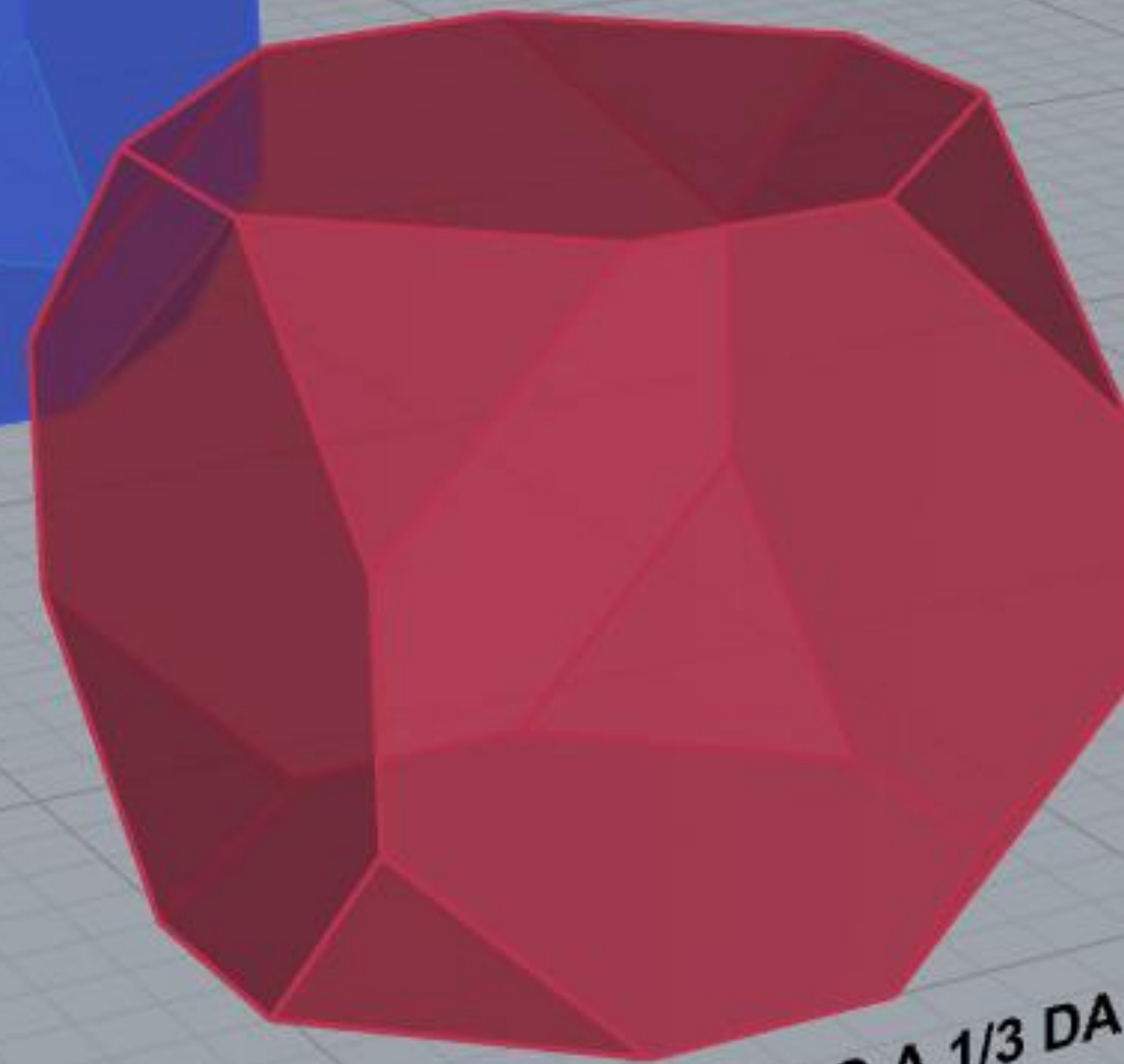
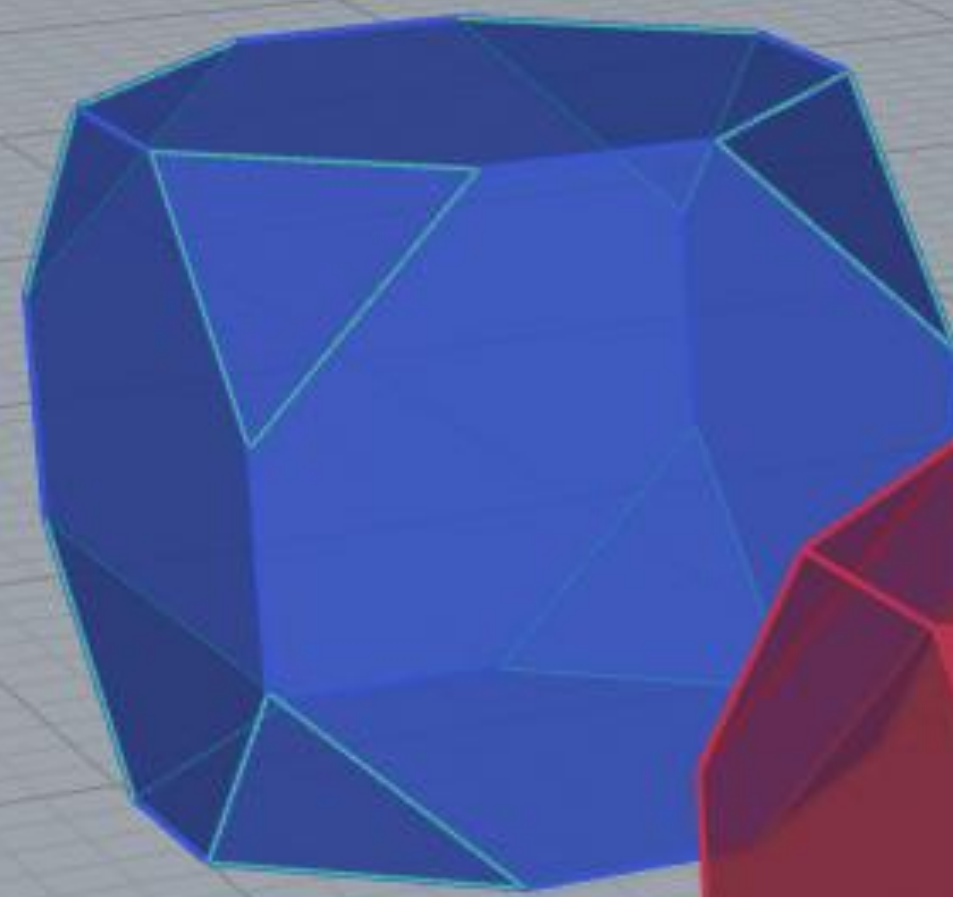
AULA. 2 – INTRODUÇÃO AO RHINO



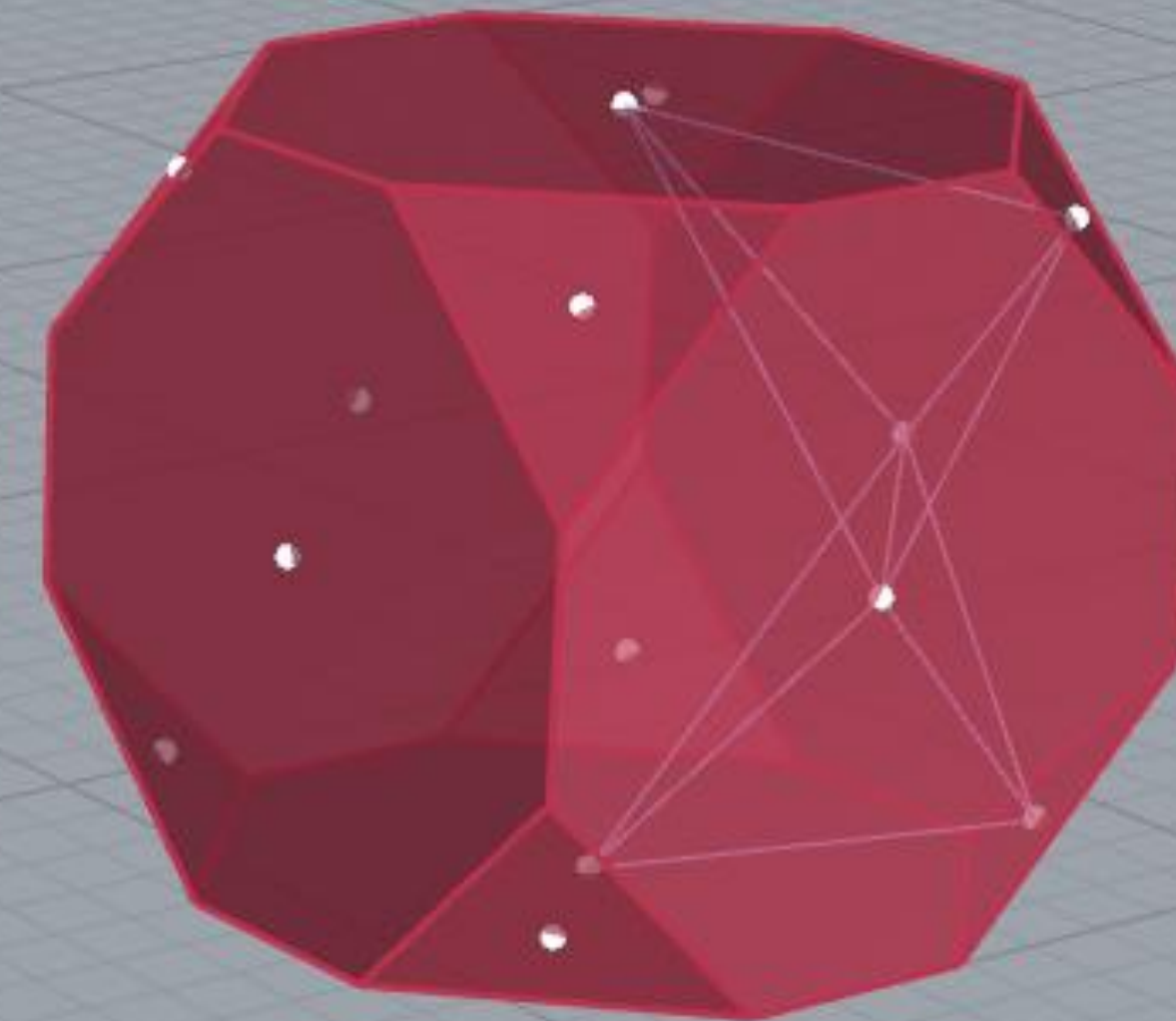
EXERCÍCIO. 1.1- CUBO TRUNCADO



EXERCÍCIO. 1.1- CUBO TRUNCADO



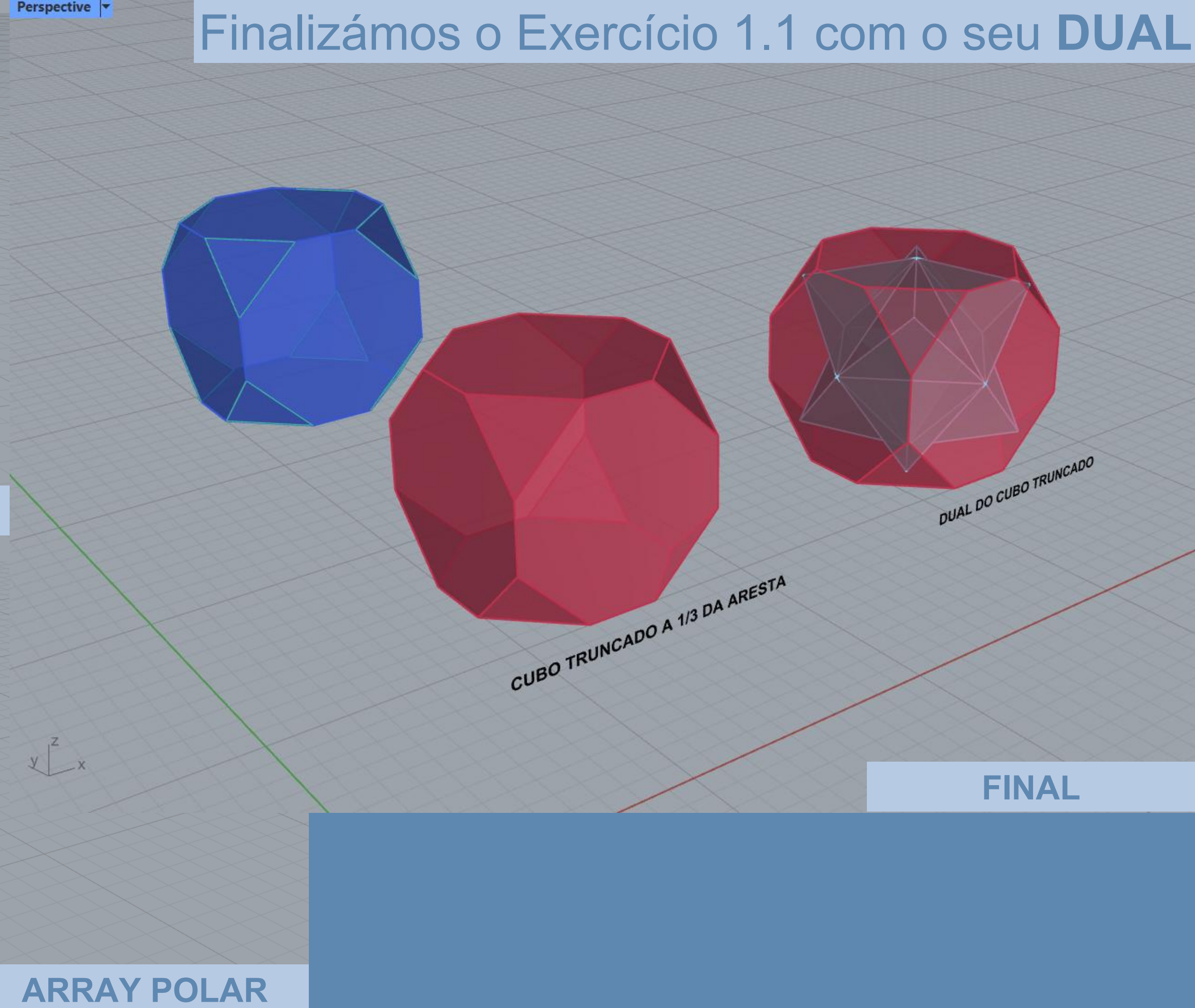
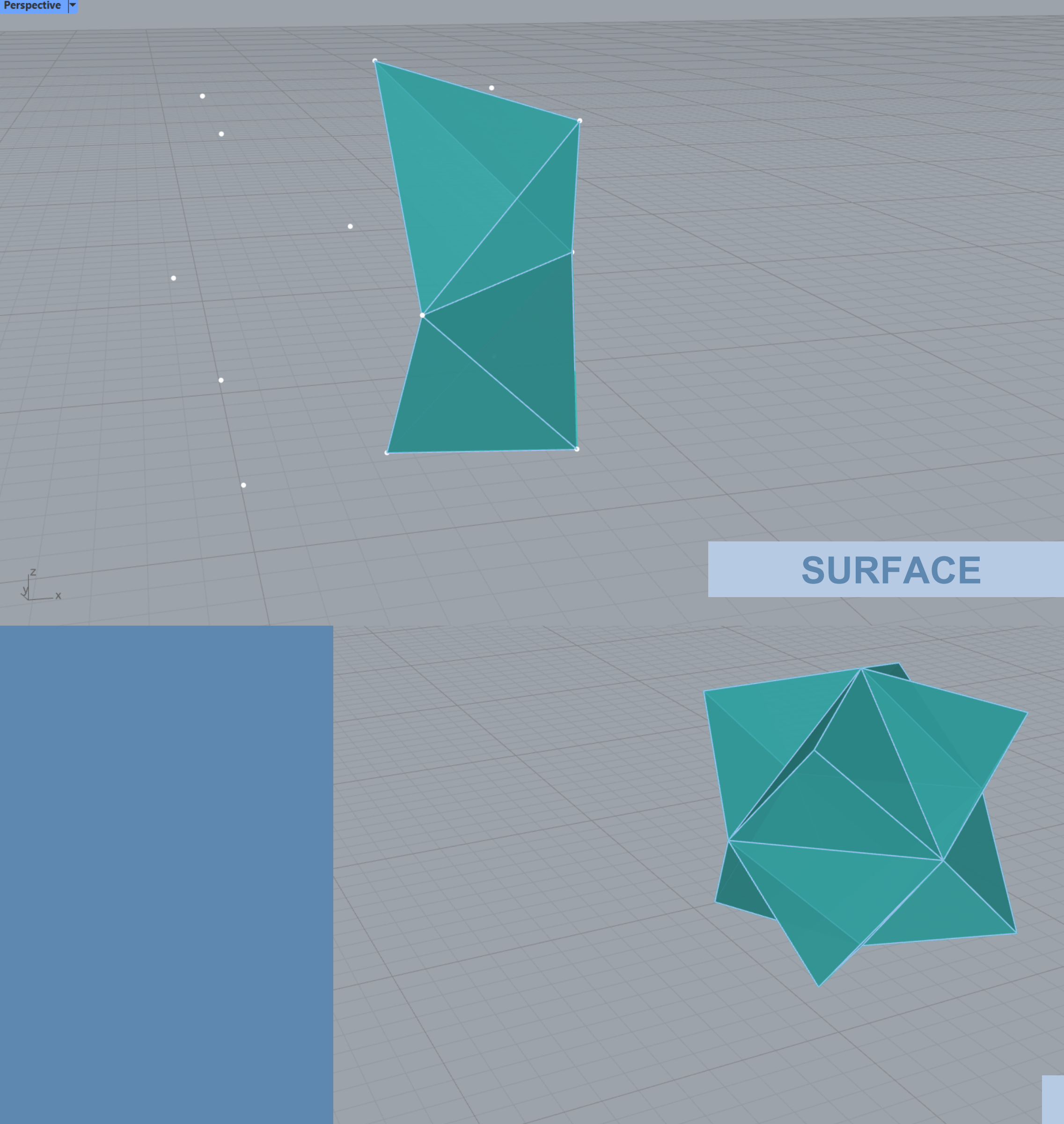
CUBO TRUNCADO A $\frac{1}{3}$ DA ARESTA



EXERCÍCIO. 1.1- CUBO TRUNCADO

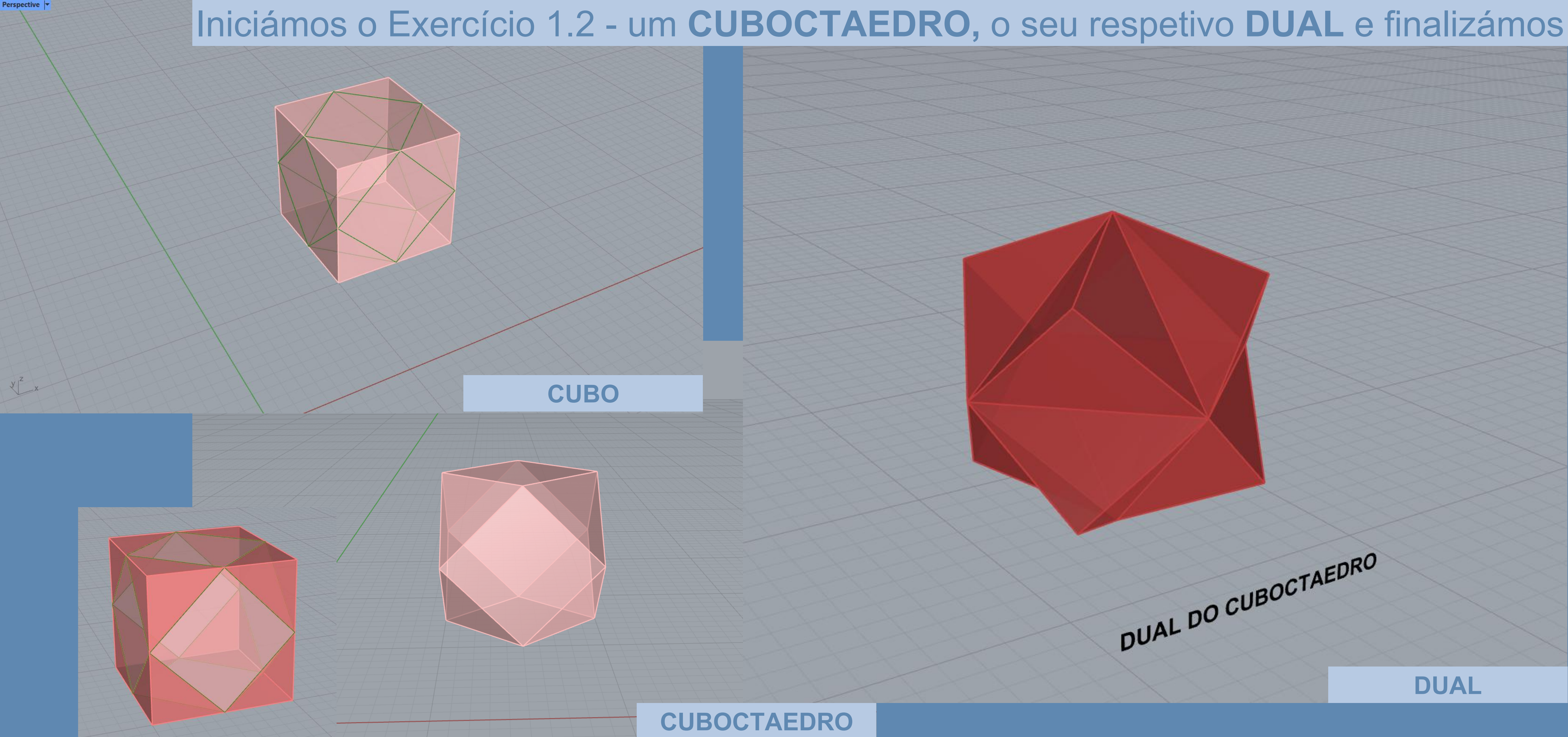
AULA. 3 – FINALIZAÇÃO DO EXERCÍCIO 1.1 E INÍCIO DO EXERCÍCIO 1.2 E 1.3

Finalizamos o Exercício 1.1 com o seu **DUAL**



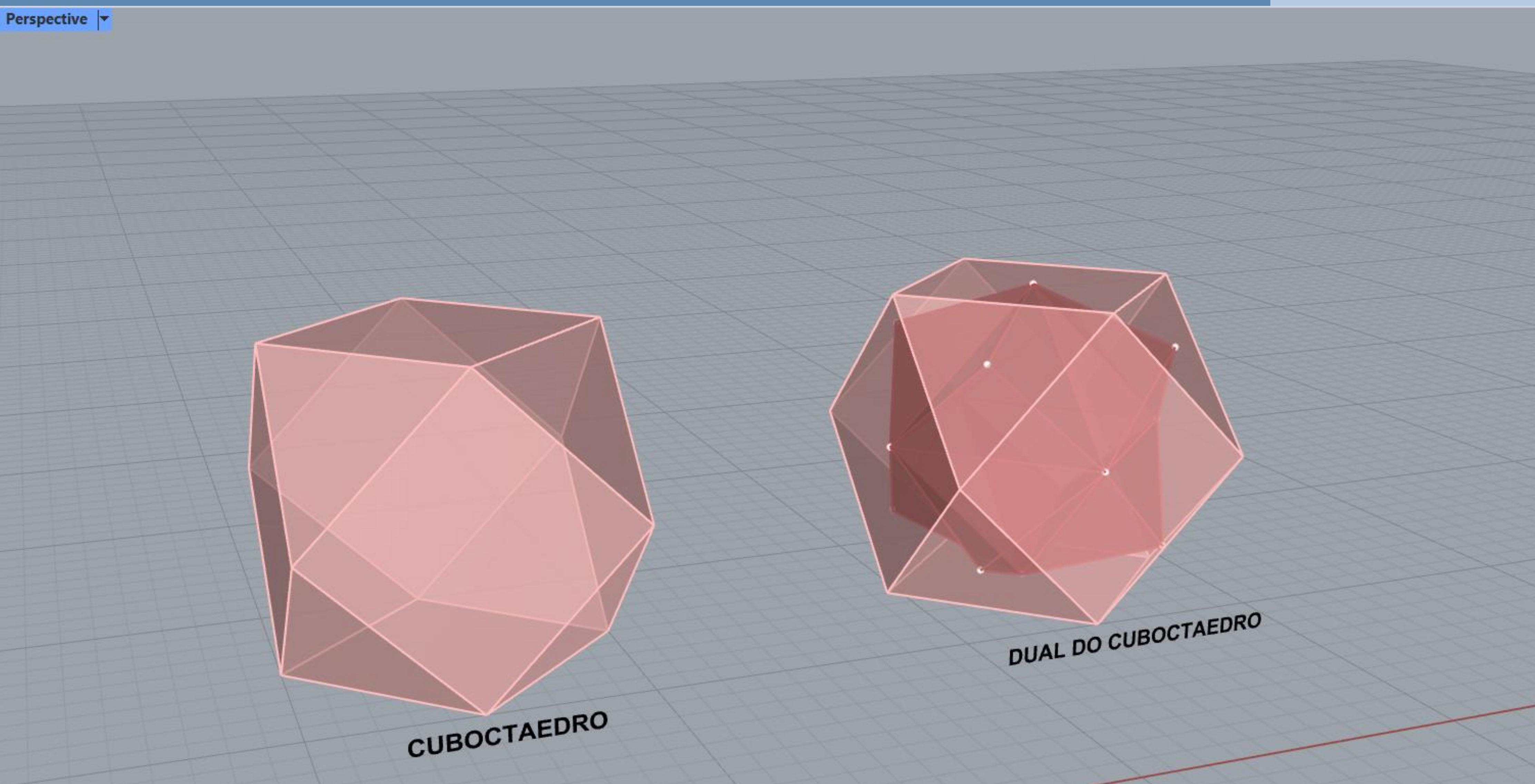
EXERCÍCIO. 1.1- DUAL DO CUBO TRUNCADO

Iniciámos o Exercício 1.2 - um **CUBOCTAEDRO**, o seu respetivo **DUAL** e finalizámos



EXERCÍCIO. 1.2- CUBOCTAEDRO E DUAL

Perspective ▾

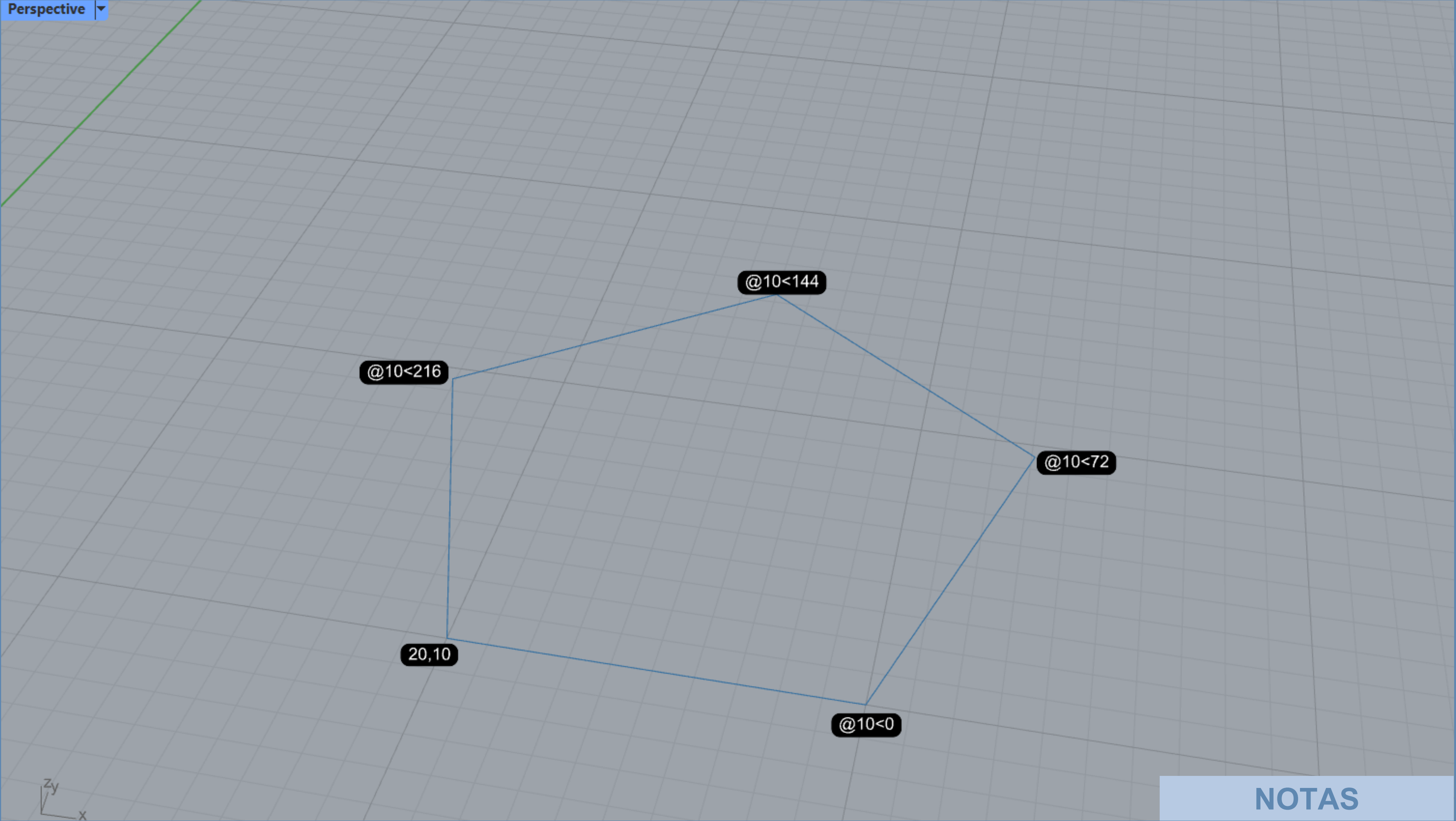


Layers

Q Search

Layer				M
Default	💡	🔒	■	○
CUBOCTAED	💡	🔒	■	○
AUX	💡	🔒	■	○
VÉRTICES	💡	🔒	■	○
TEXTO	✓		■	○
DUAL FACE	💡	🔒	■	○
WIRES	💡	🔒	■	○
ARAMES	💡	🔒	■	○

EXERCÍCIO. 1.2- CUBOCTAEDRO E DUAL



Layer				M
Default				
PENTA				
AUX				
TEXT0				
NOTAS				
DODCAEDR				

Dot

Font: Height:

Display text

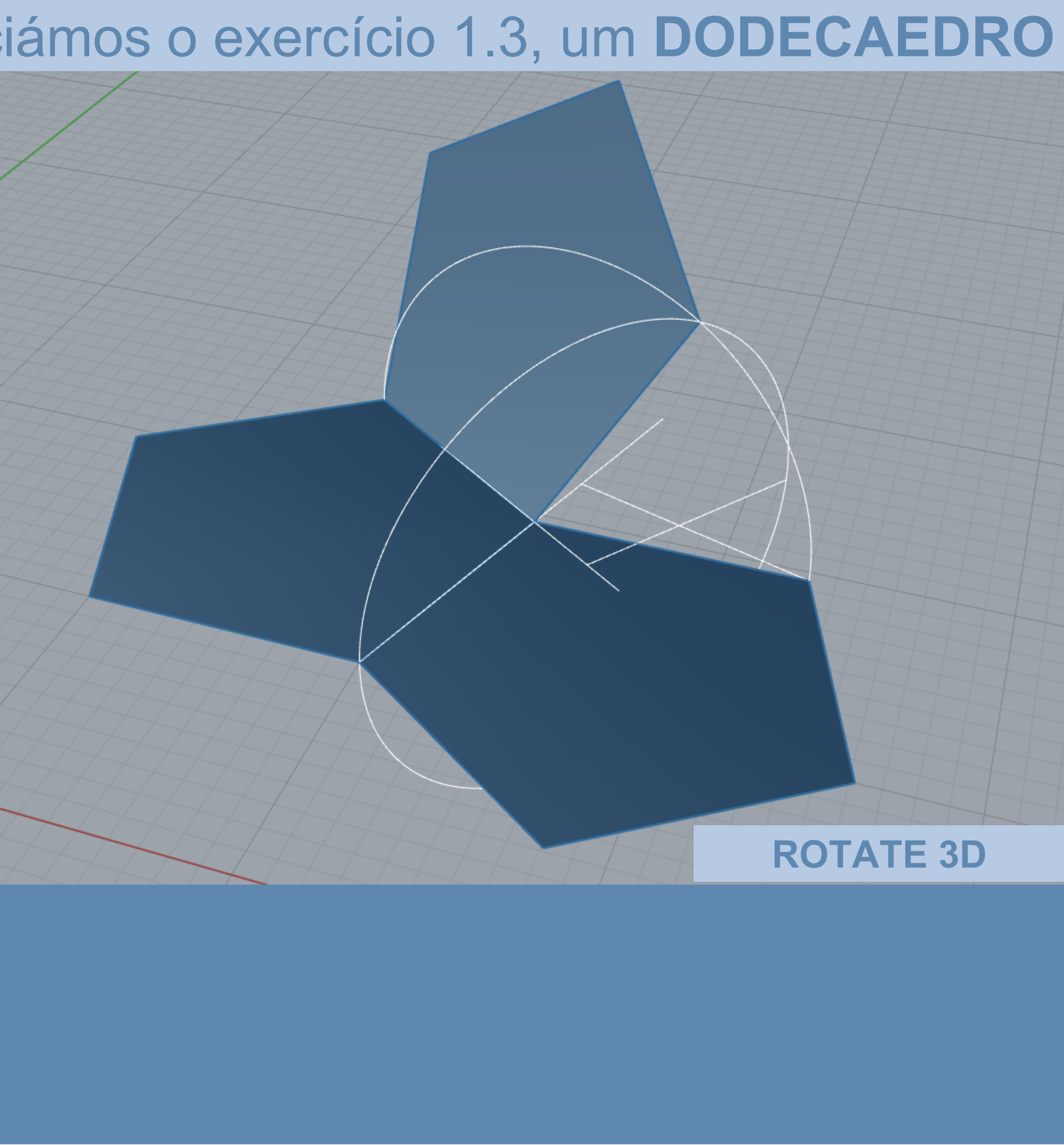
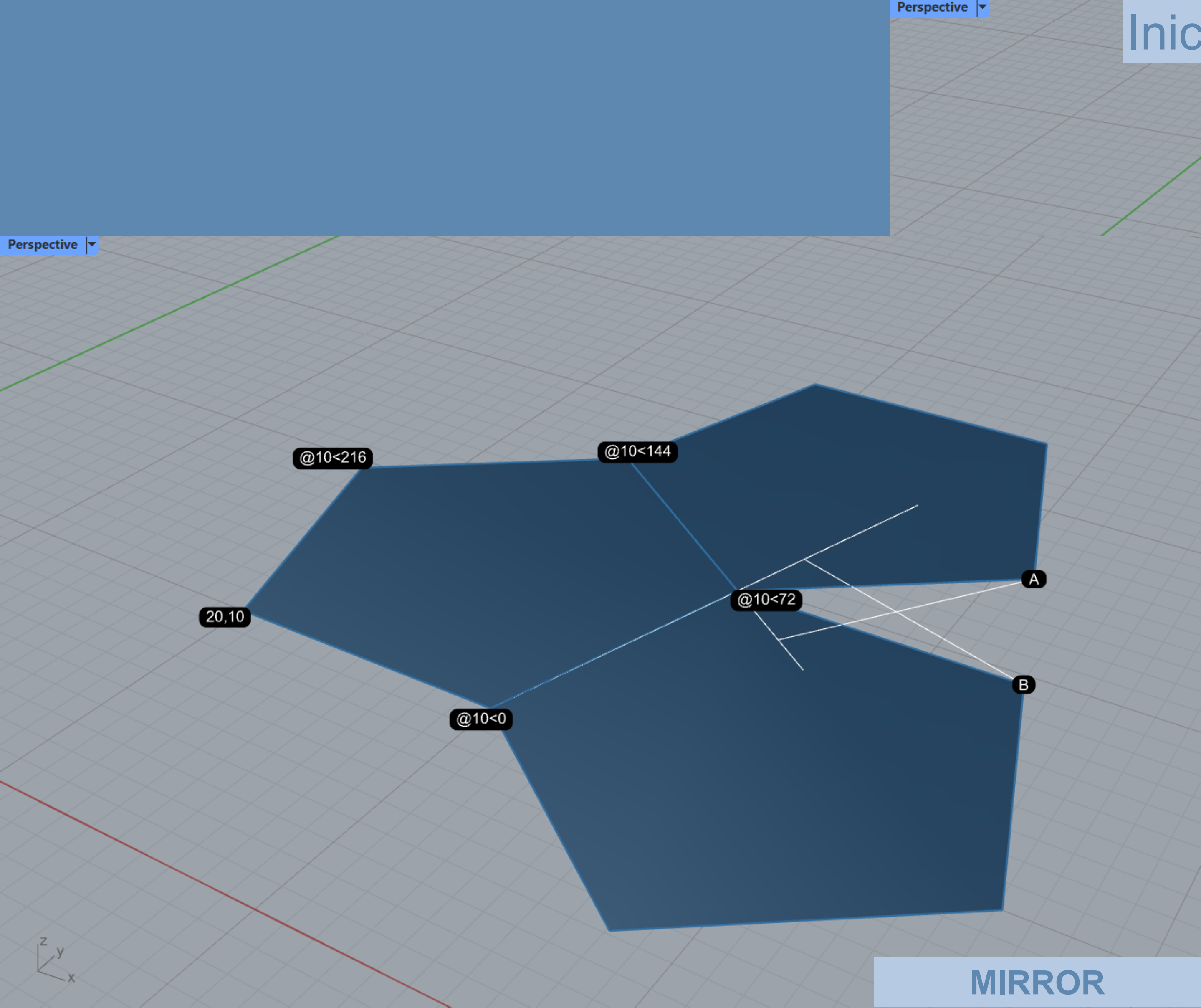
Secondary text

EXERCÍCIO. 1.3- INTRODUÇÃO AO DODECAEDRO

Iniciámos o exercício 1.3, um **DODECAEDRO**

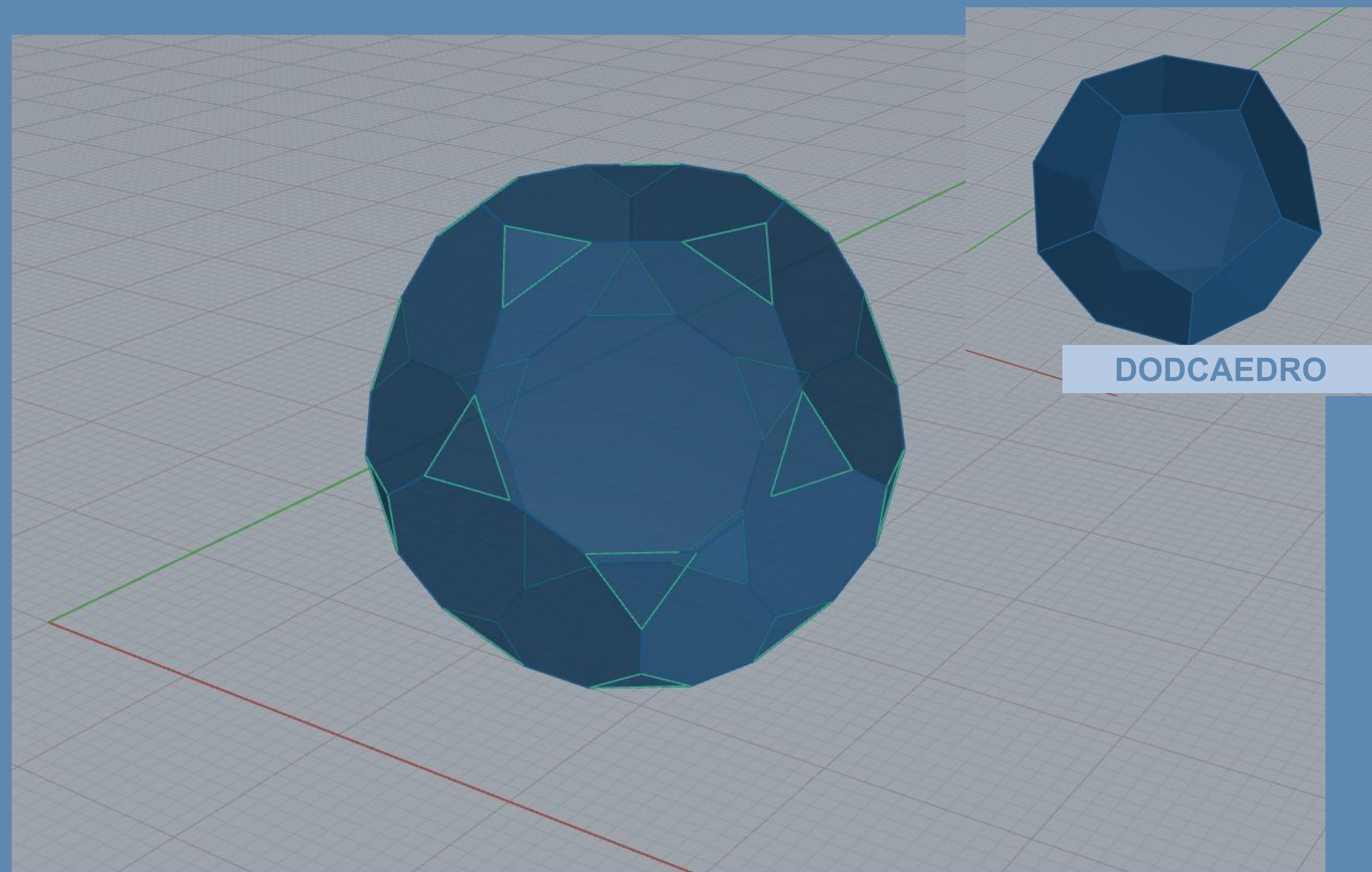
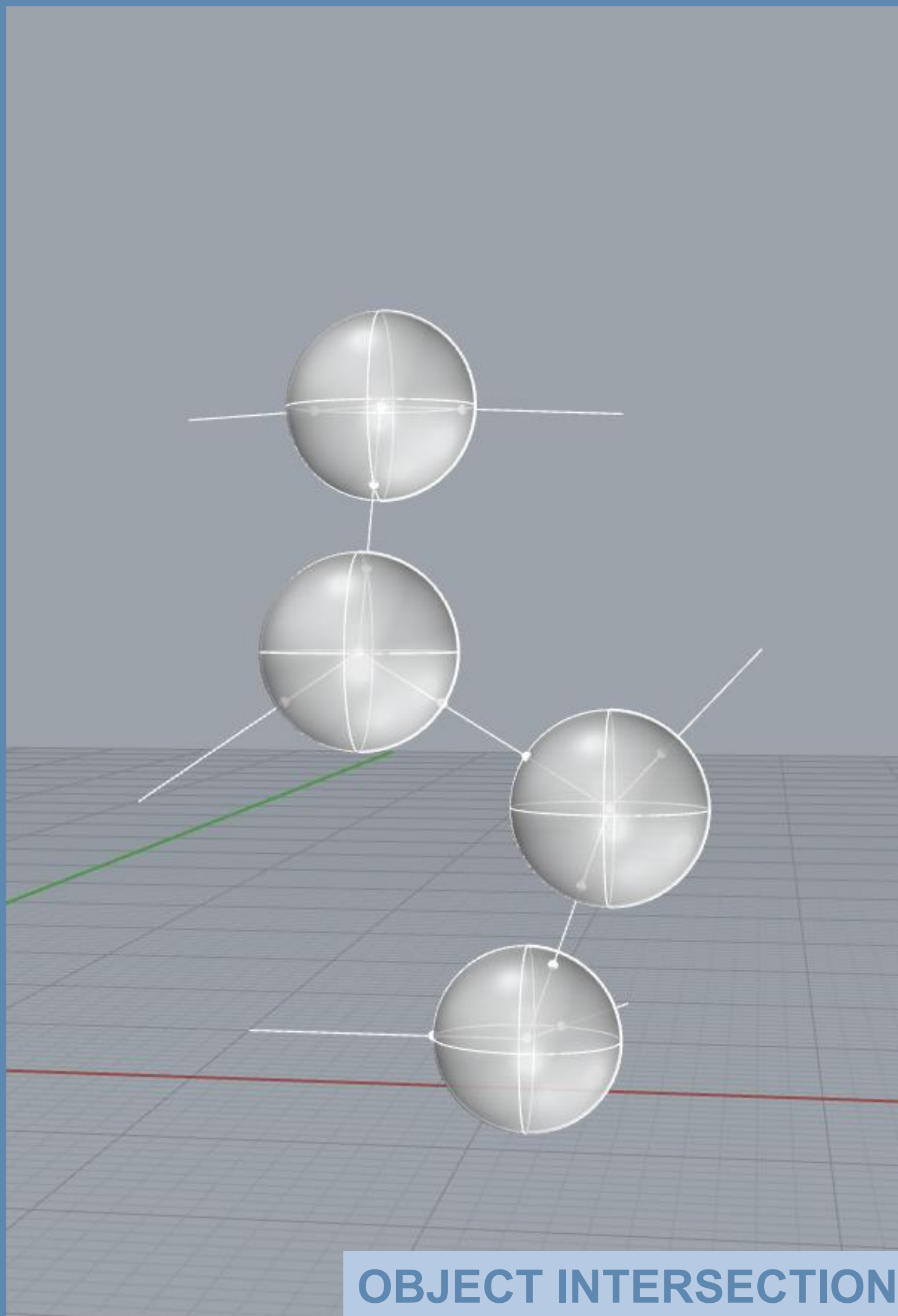
Perspective

Perspective

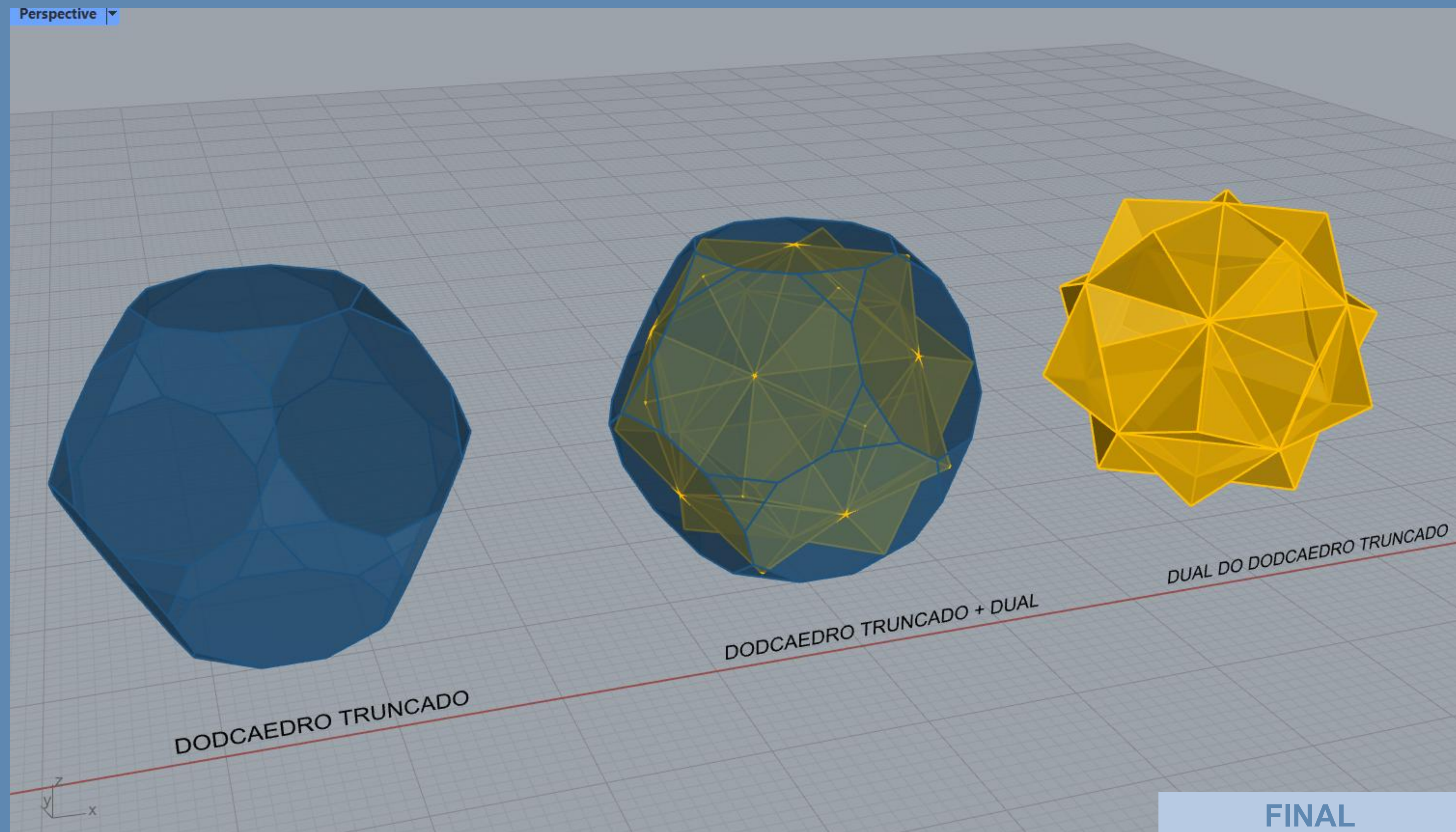
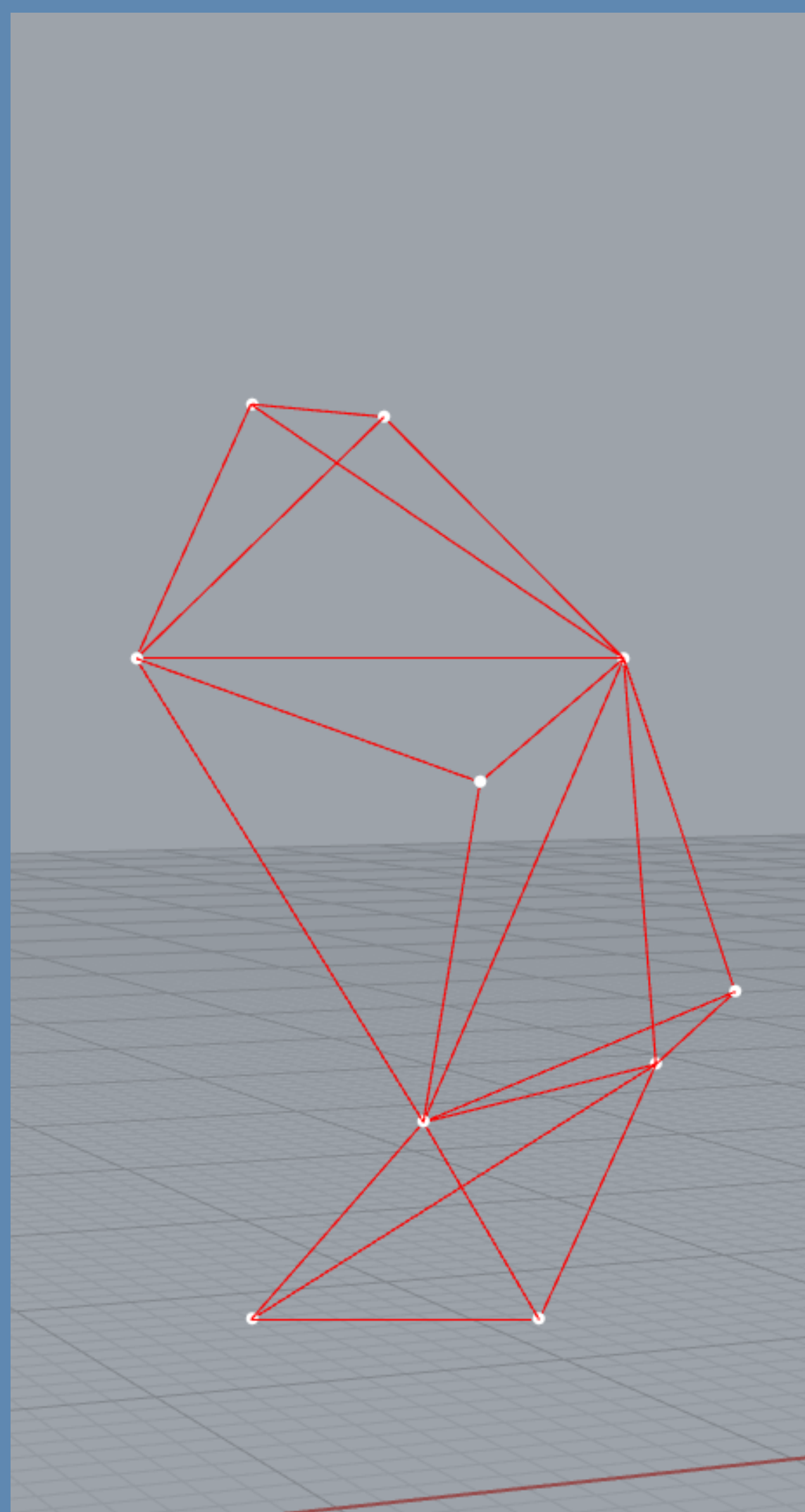


EXERCÍCIO. 1.3- INTRODUÇÃO AO DODECAEDRO

AULA. 4 – FINALIZAÇÃO DO EXERCÍCIO 1.3

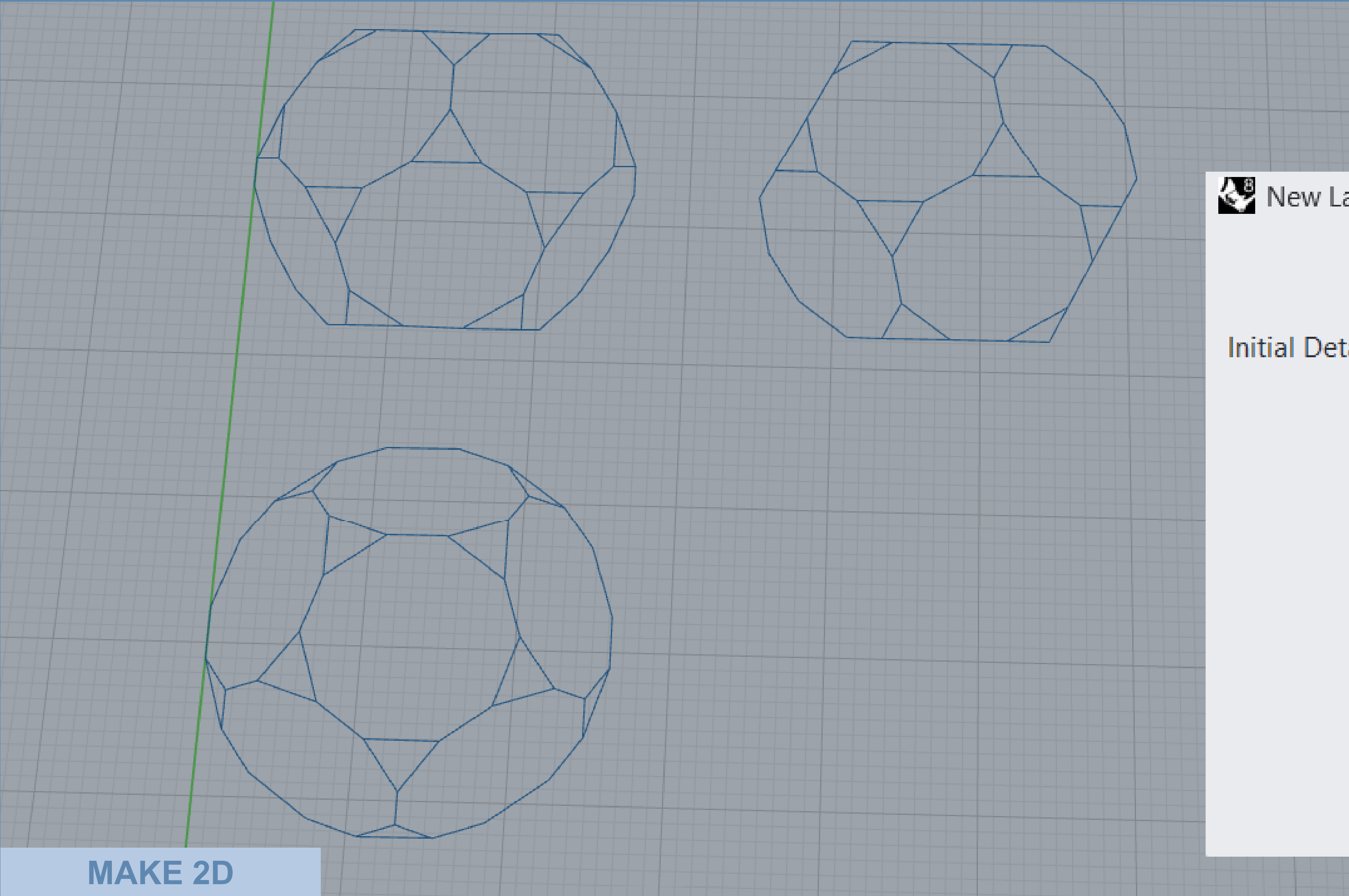


EXERCÍCIO. 1.3- FINALIZAÇÃO DO DODECAEDRO



EXERCÍCIO. 1.3- FINALIZAÇÃO DO DODECAEDRO

AULA. 5 – COMO FAZER LAYOUTS



 New Layout ✕

Name:

Initial Detail Count:

Printers:

Size:

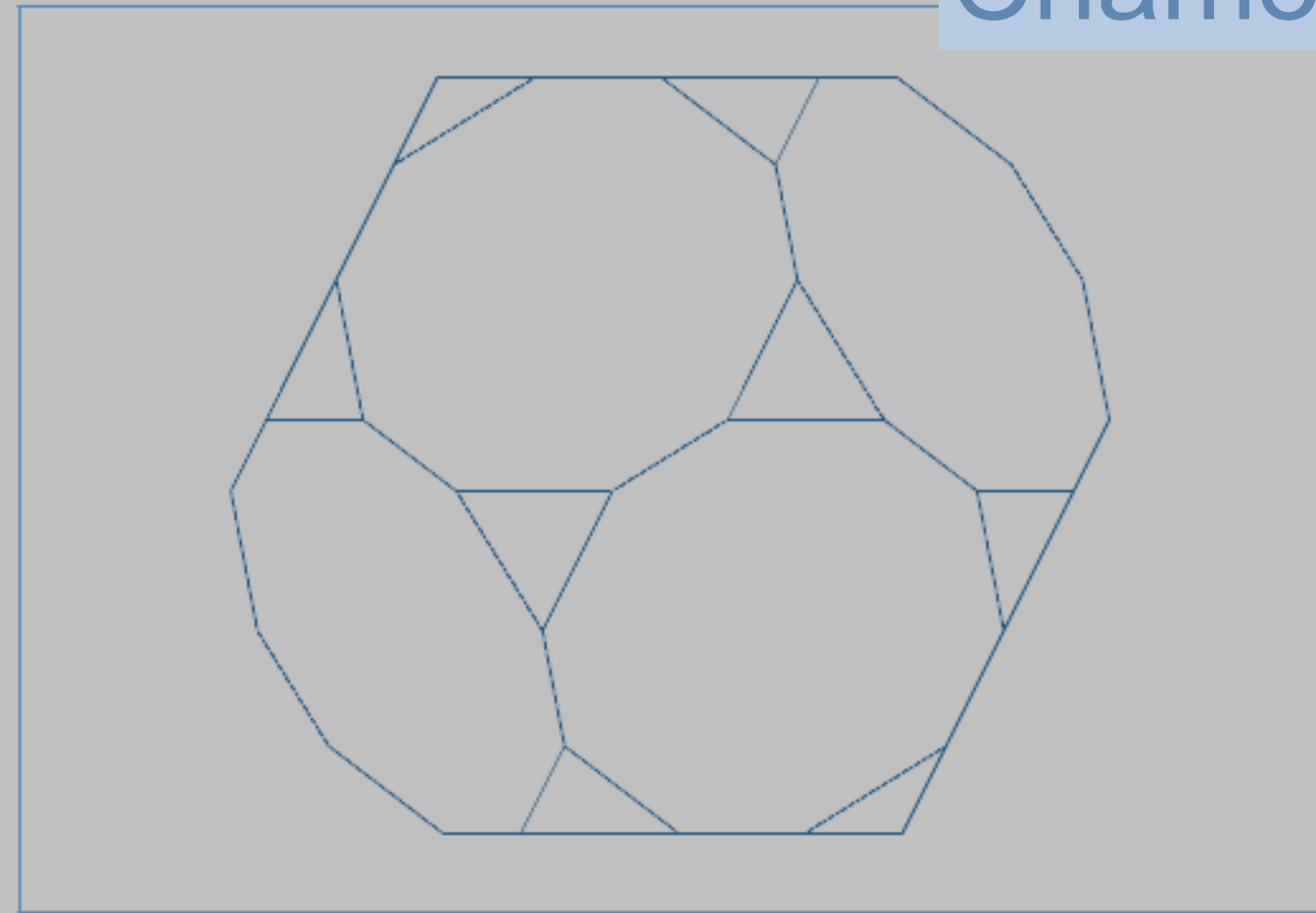
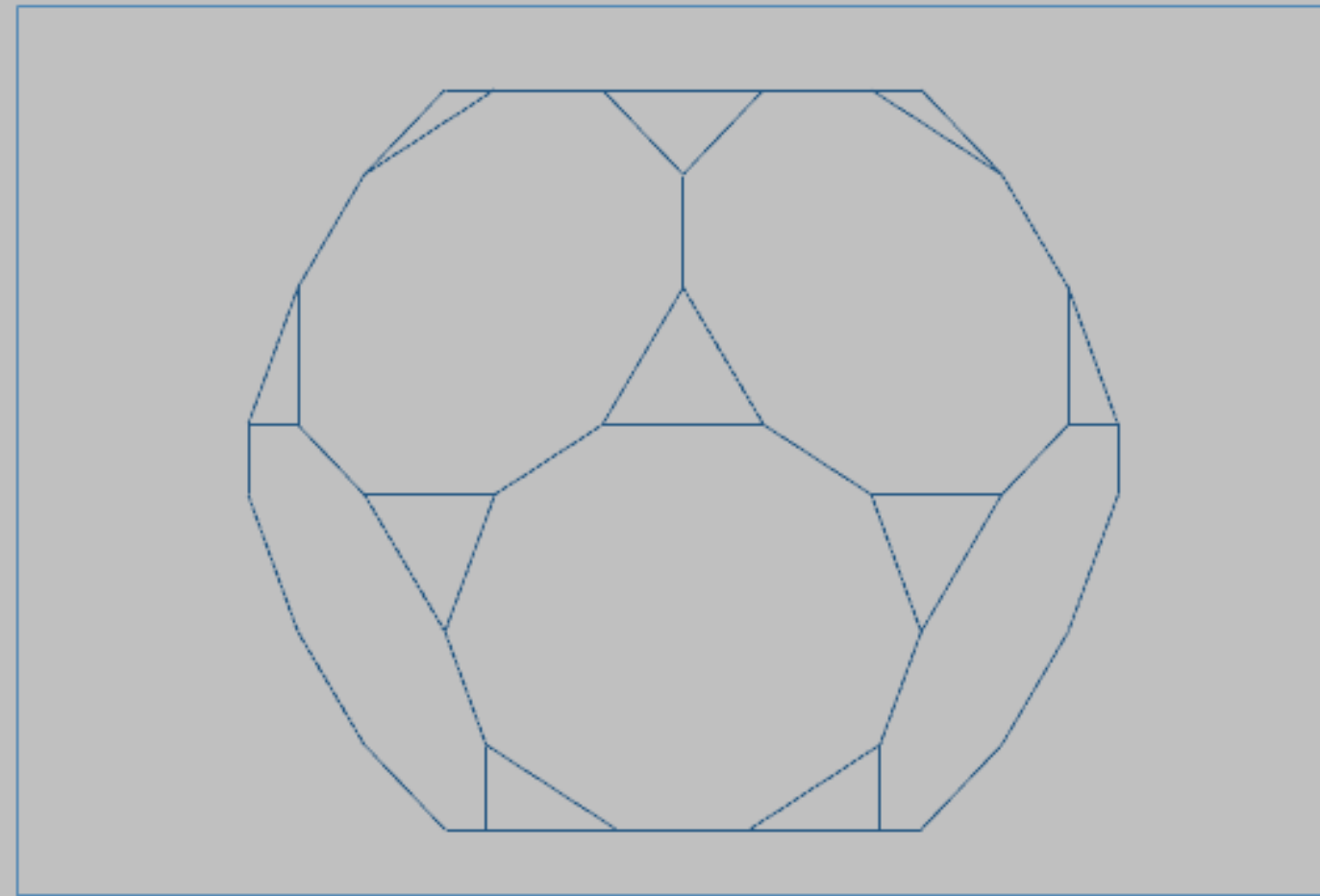
☐ Portrait

☒ Landscape

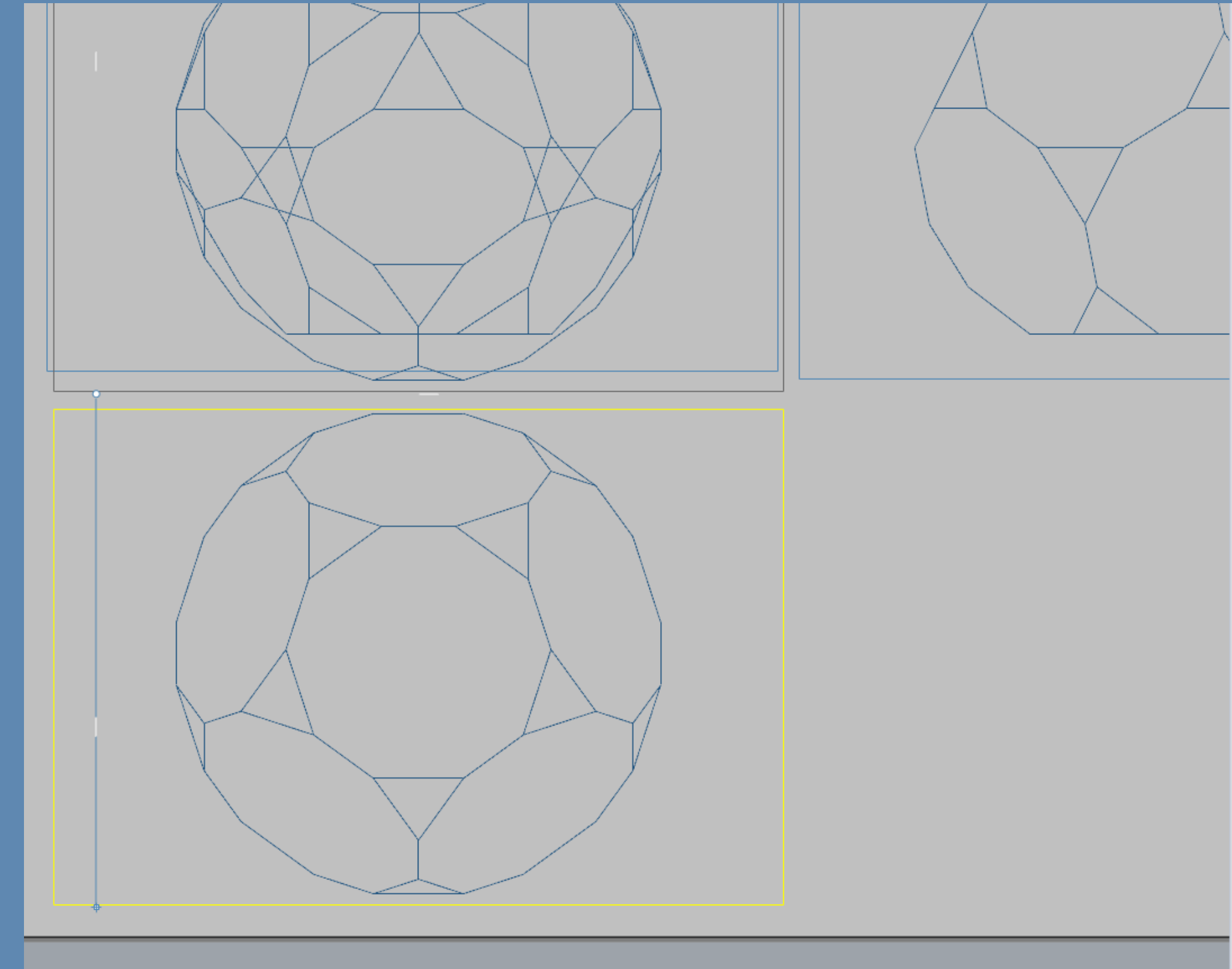
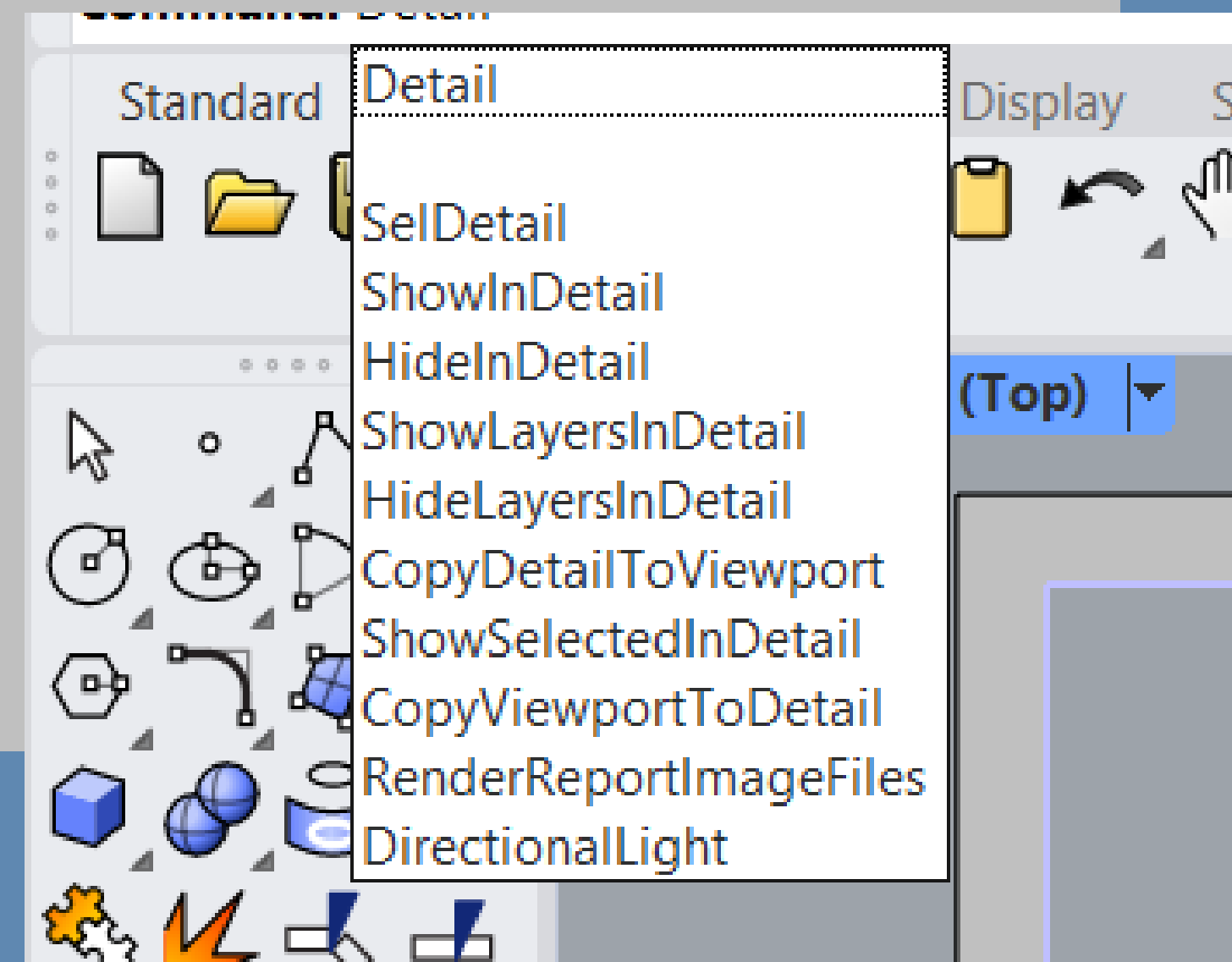
Width:

Height:

Criámos um **DETAIL** para cada vista no **LAYOUT**

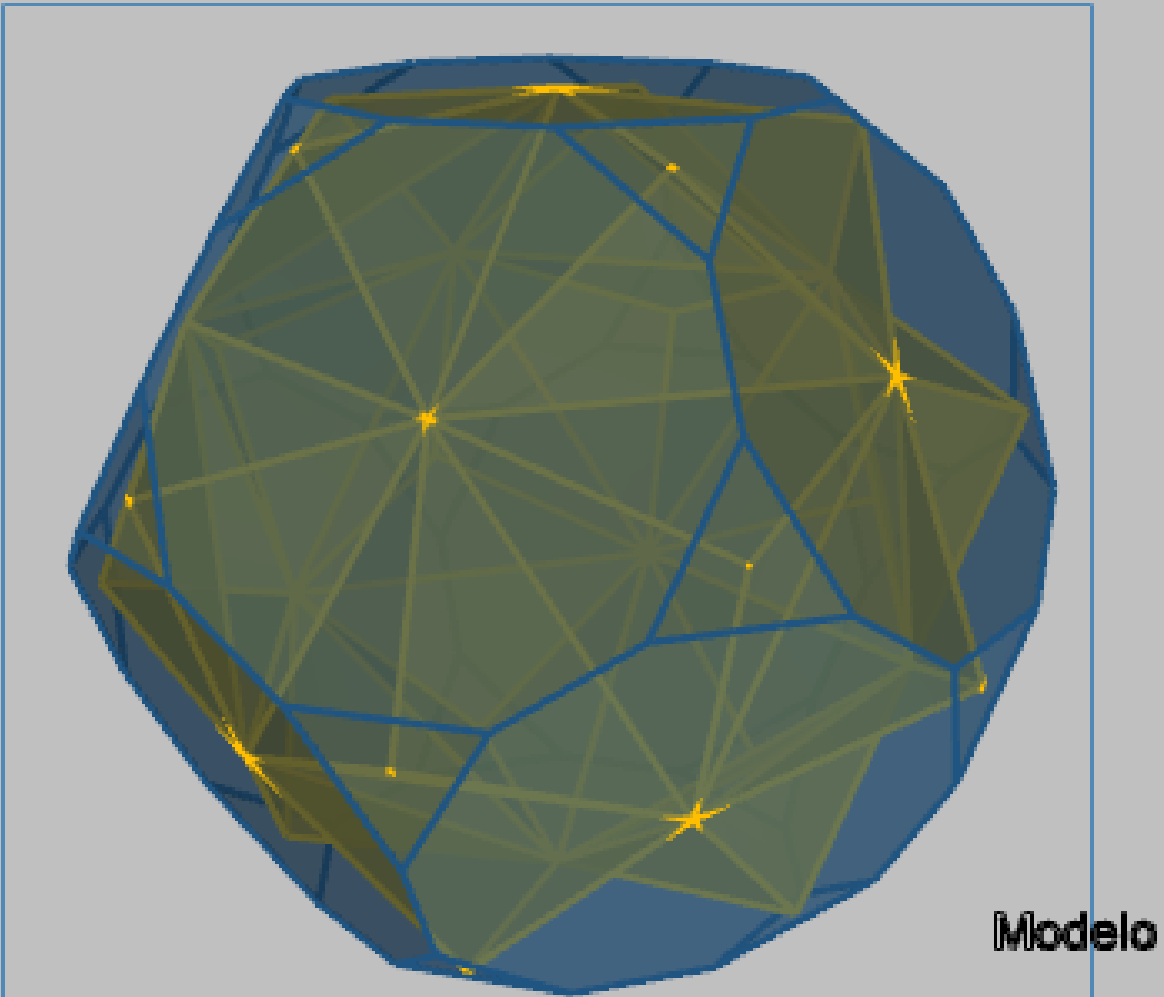
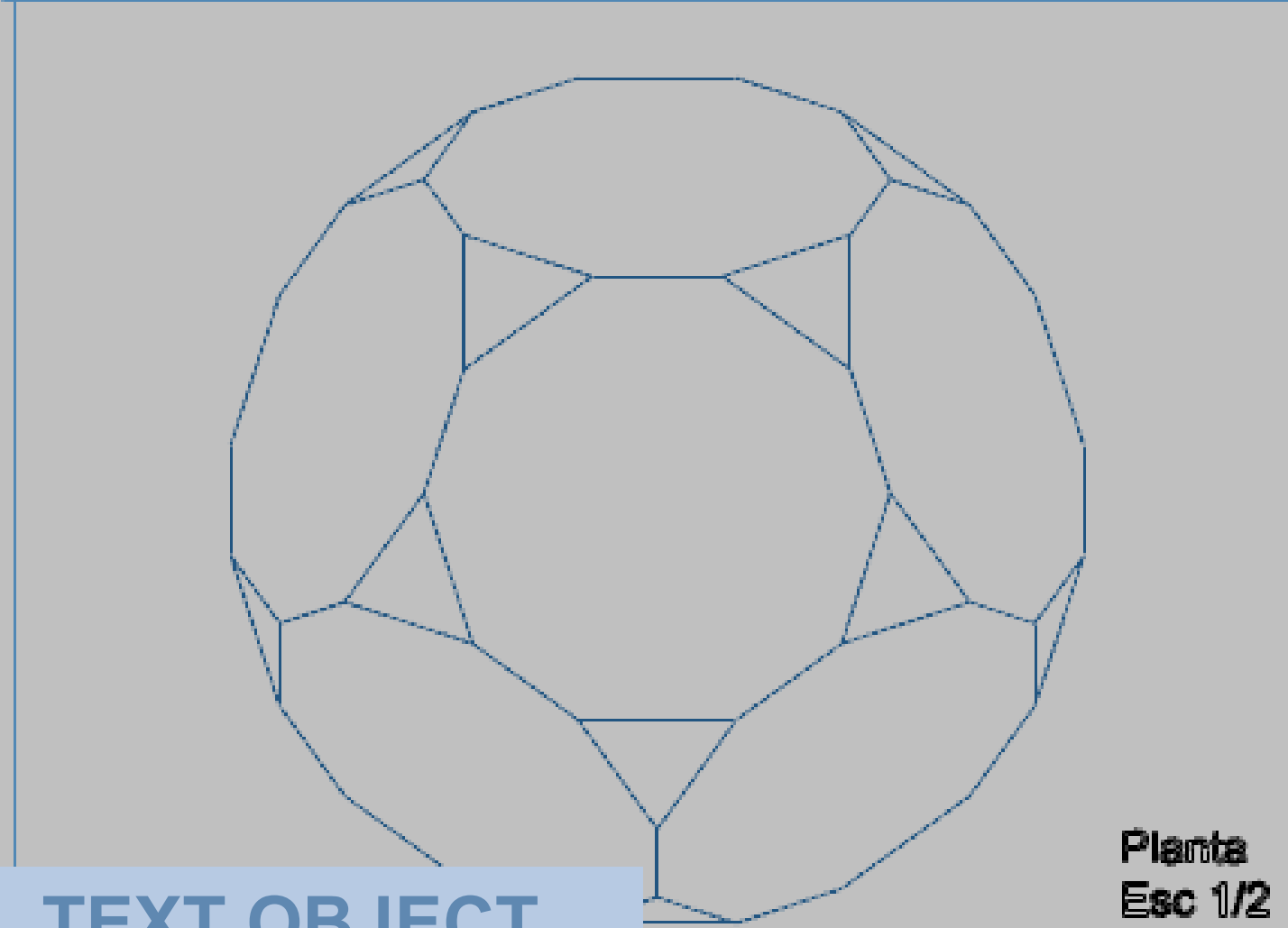
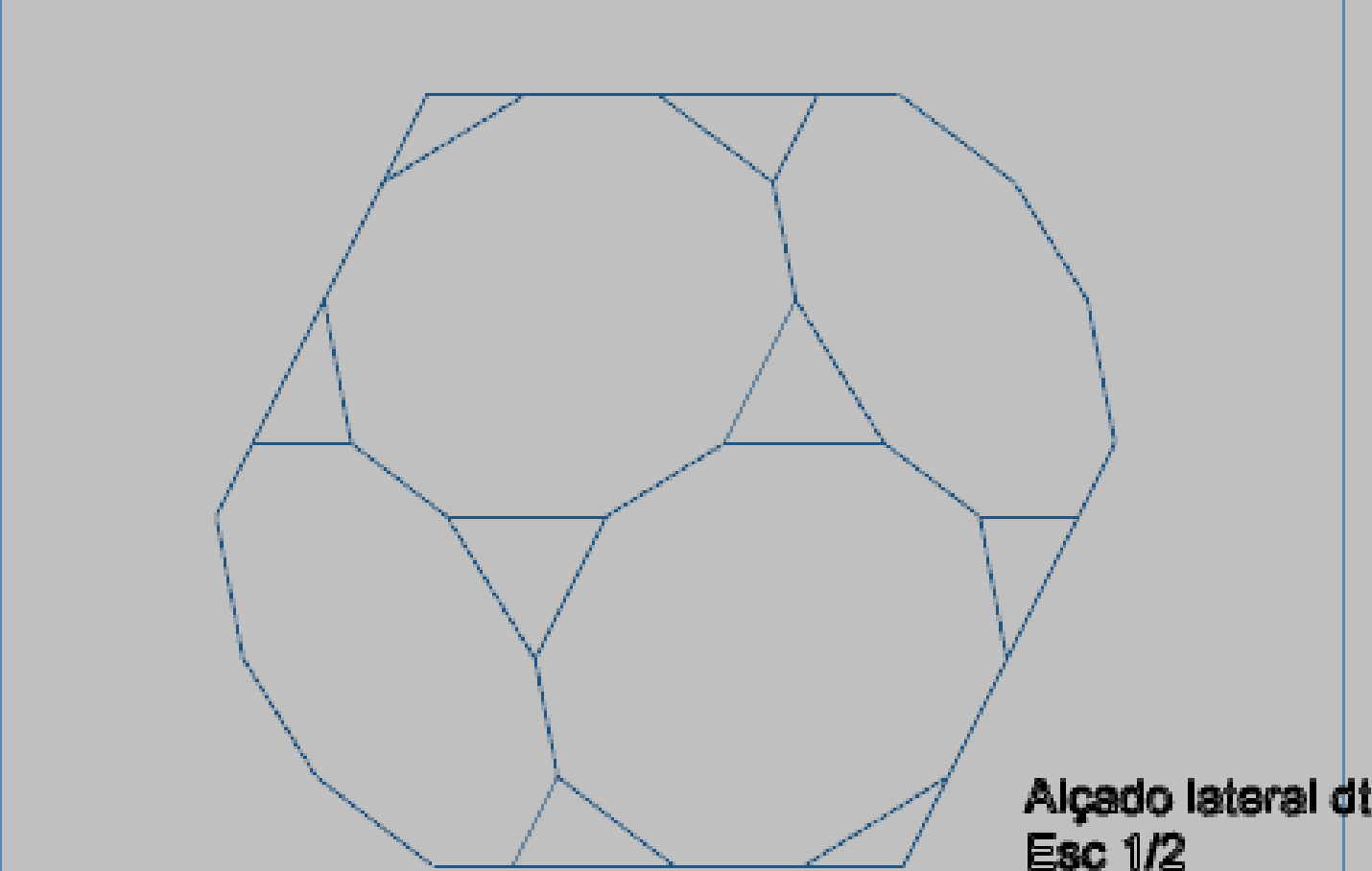
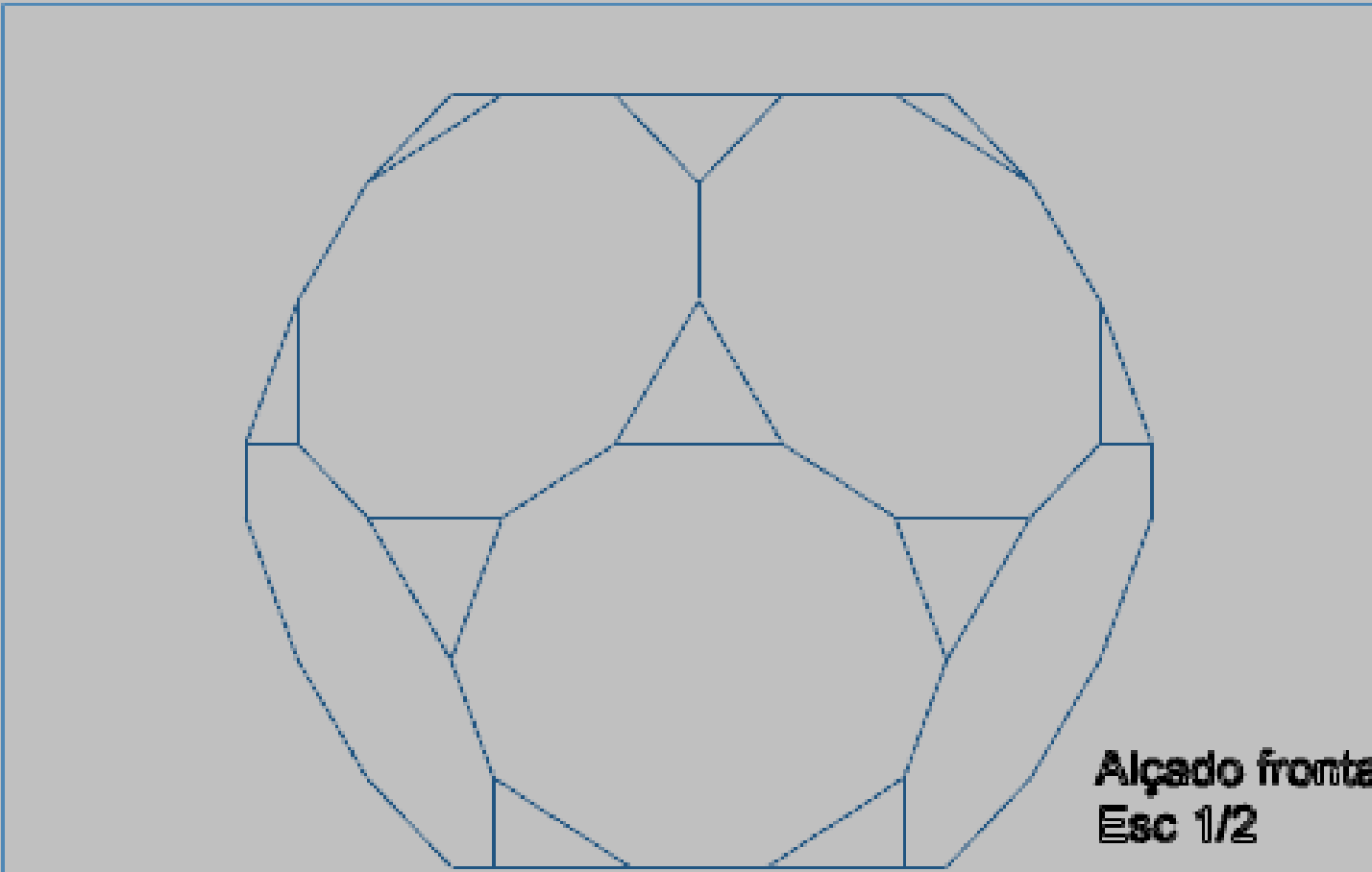
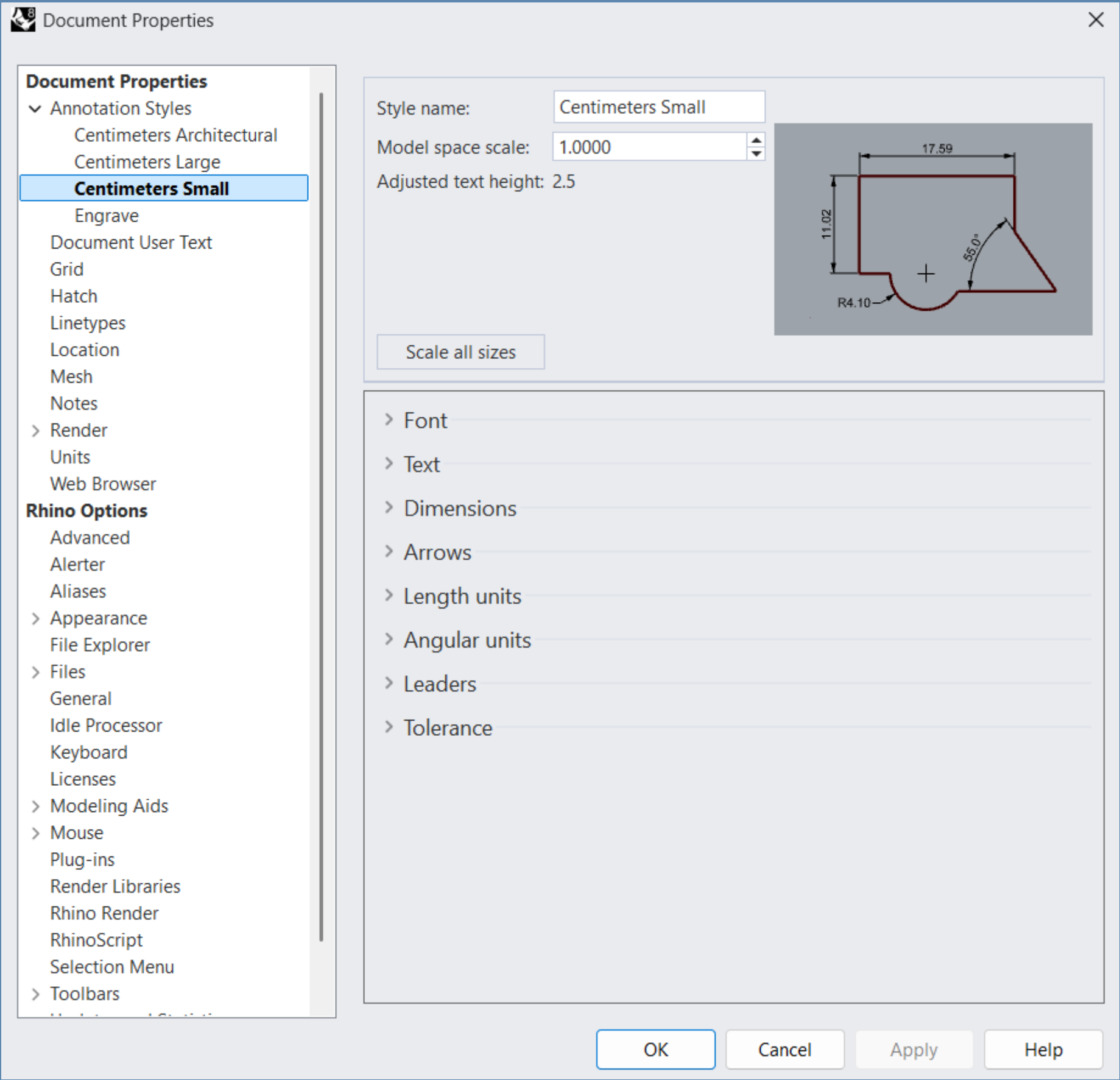


MAKE 2D



LAYOUT

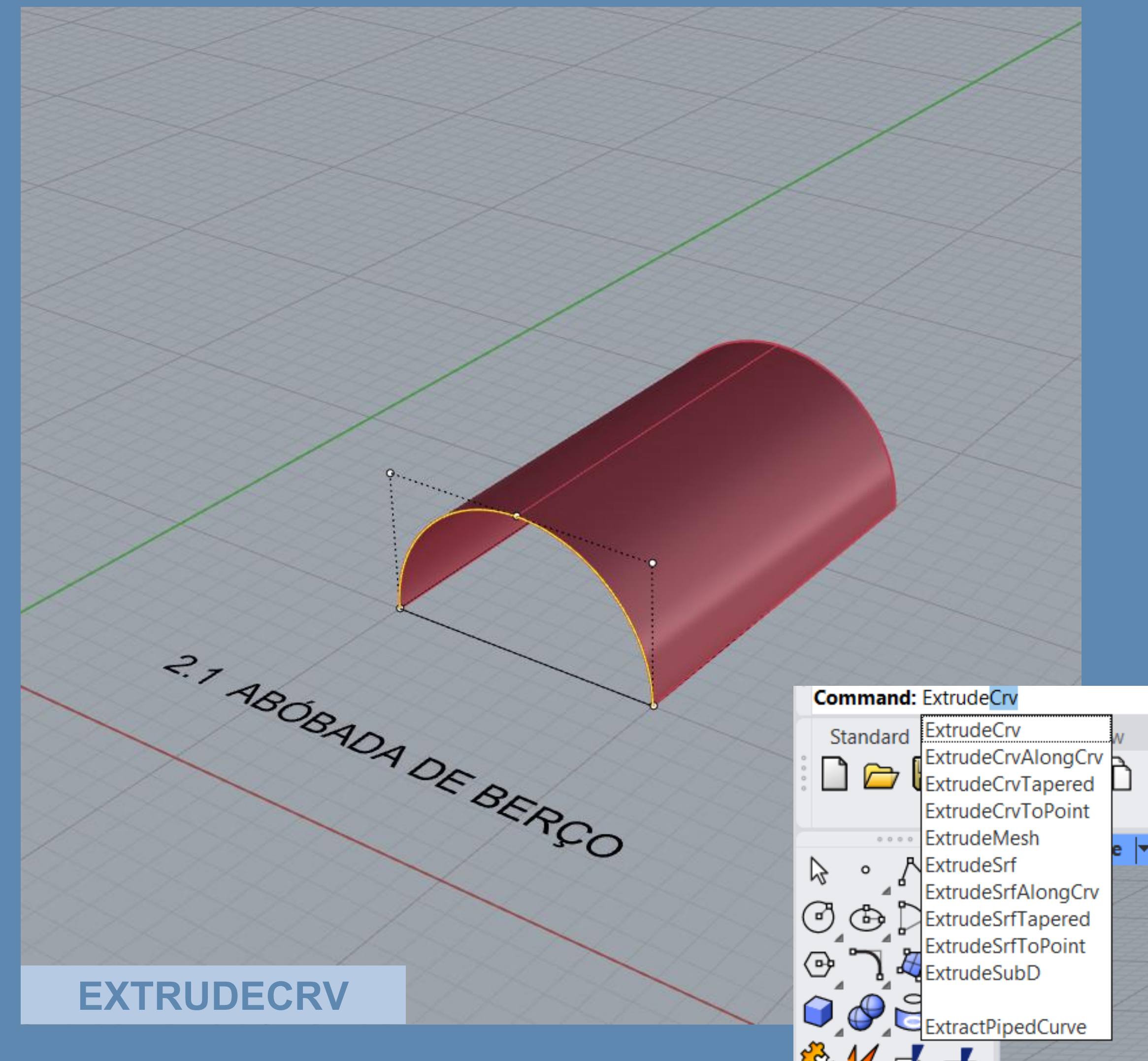
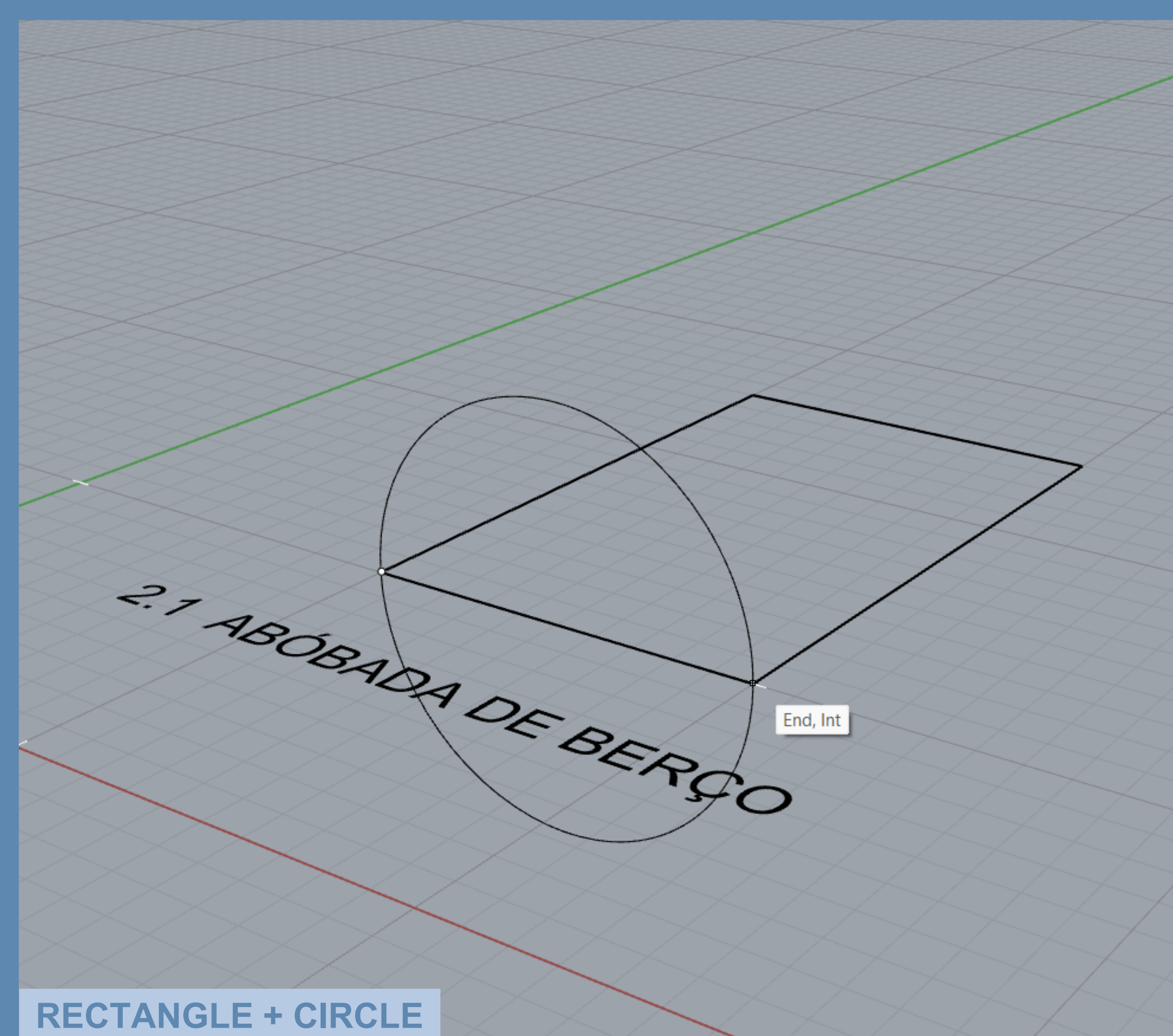
PROPRIEDADES para mudar o design das anotações



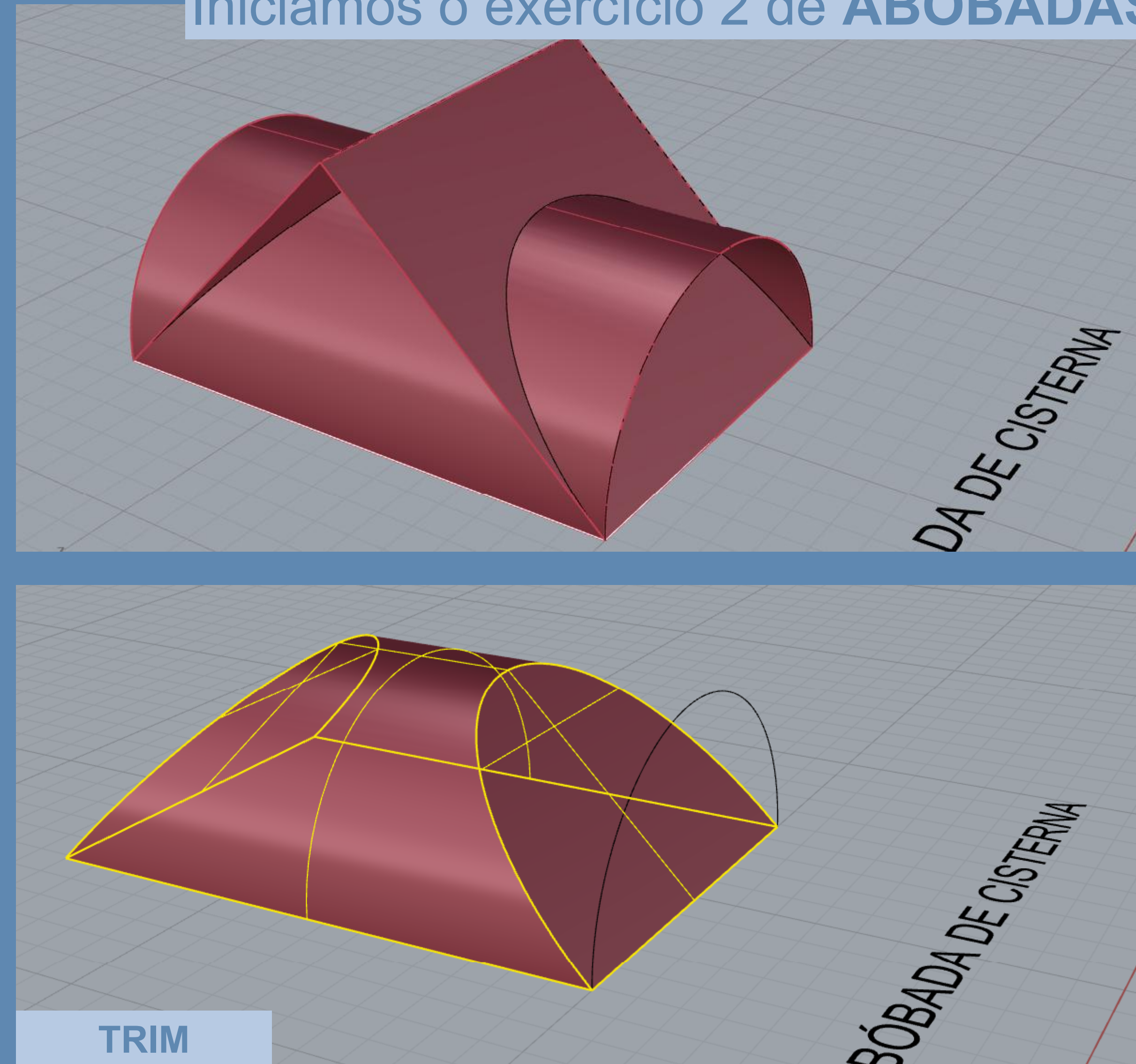
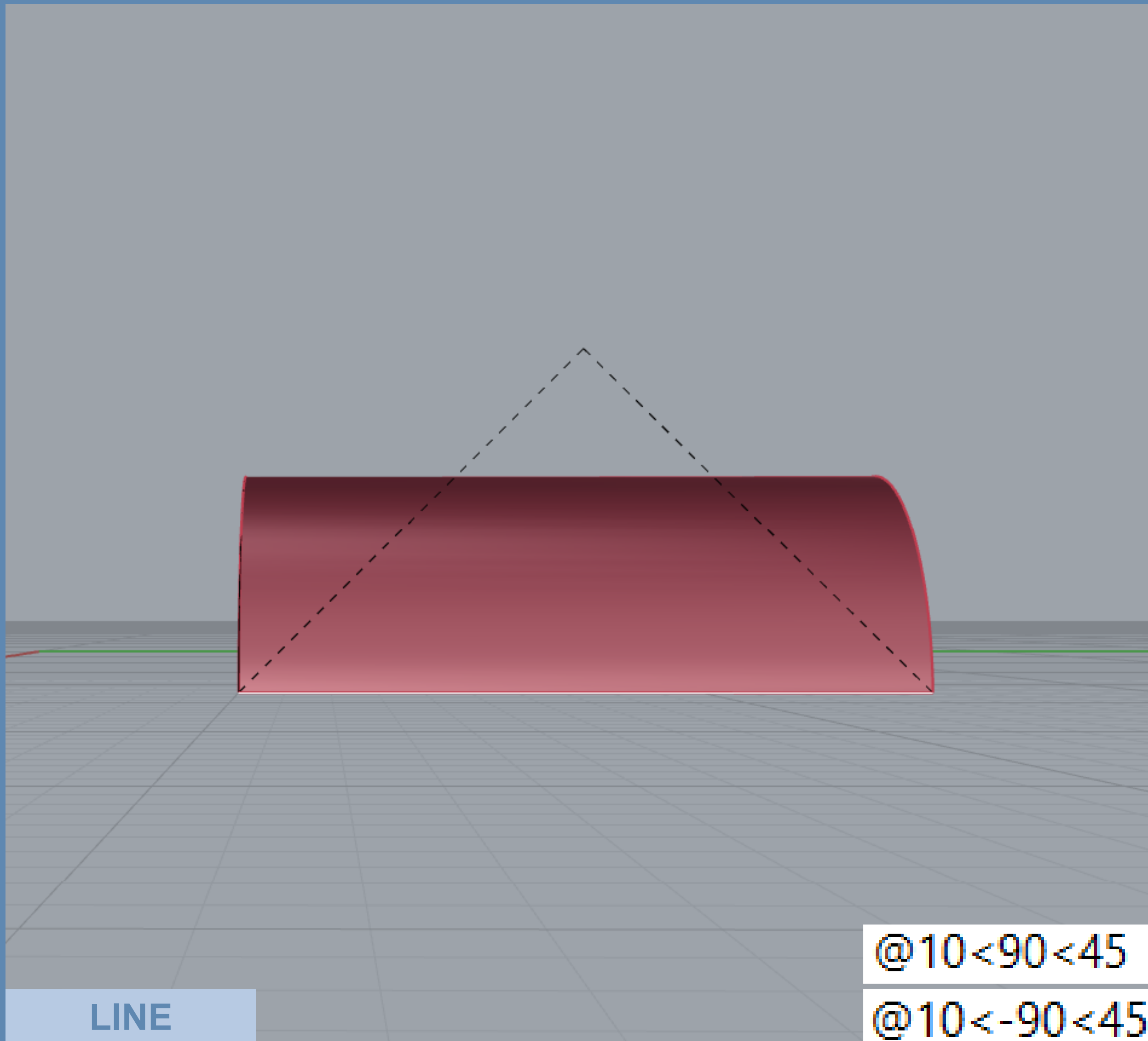
TEXT OBJECT

LAYOUT

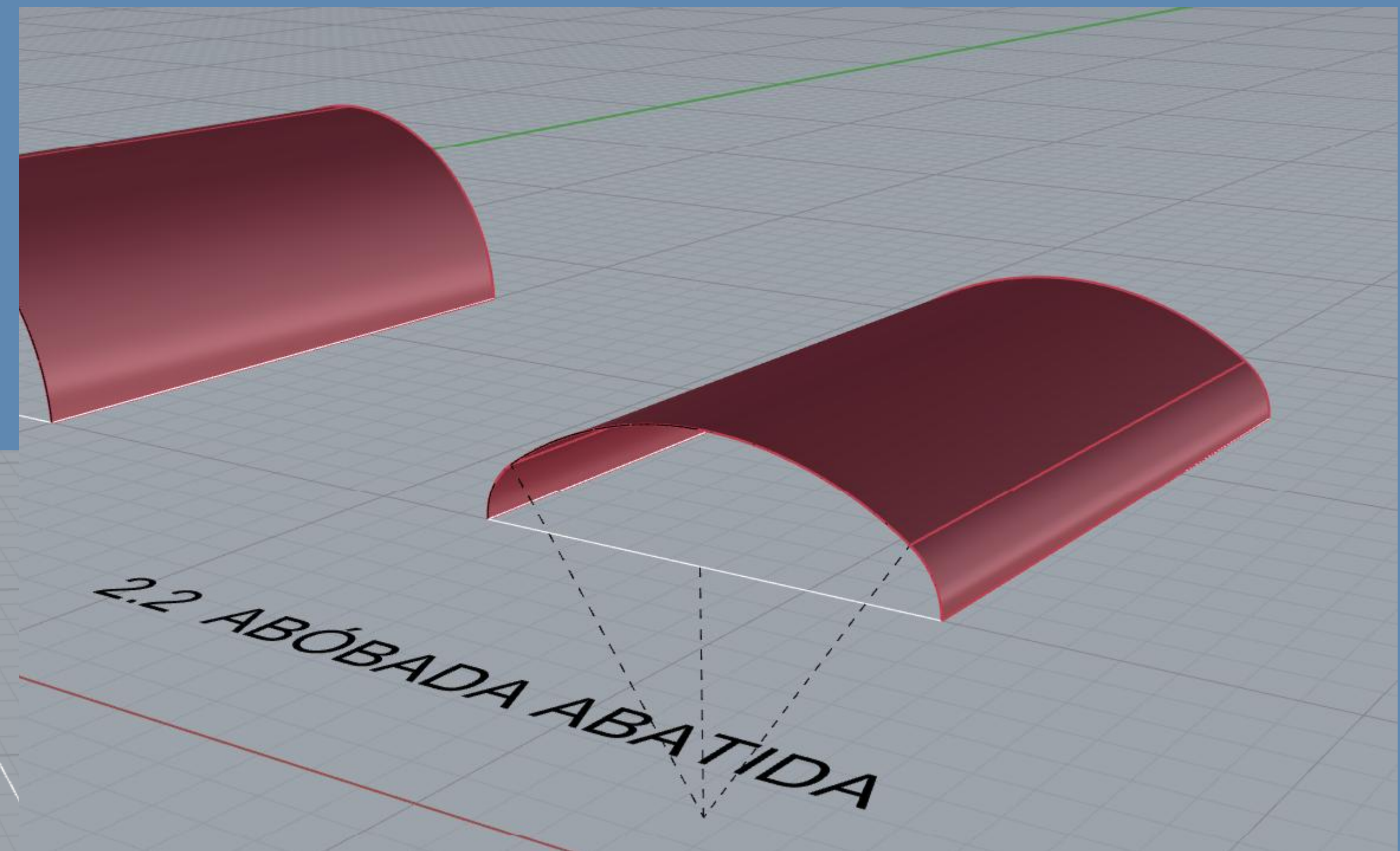
AULA. 6 – ABÓBADAS



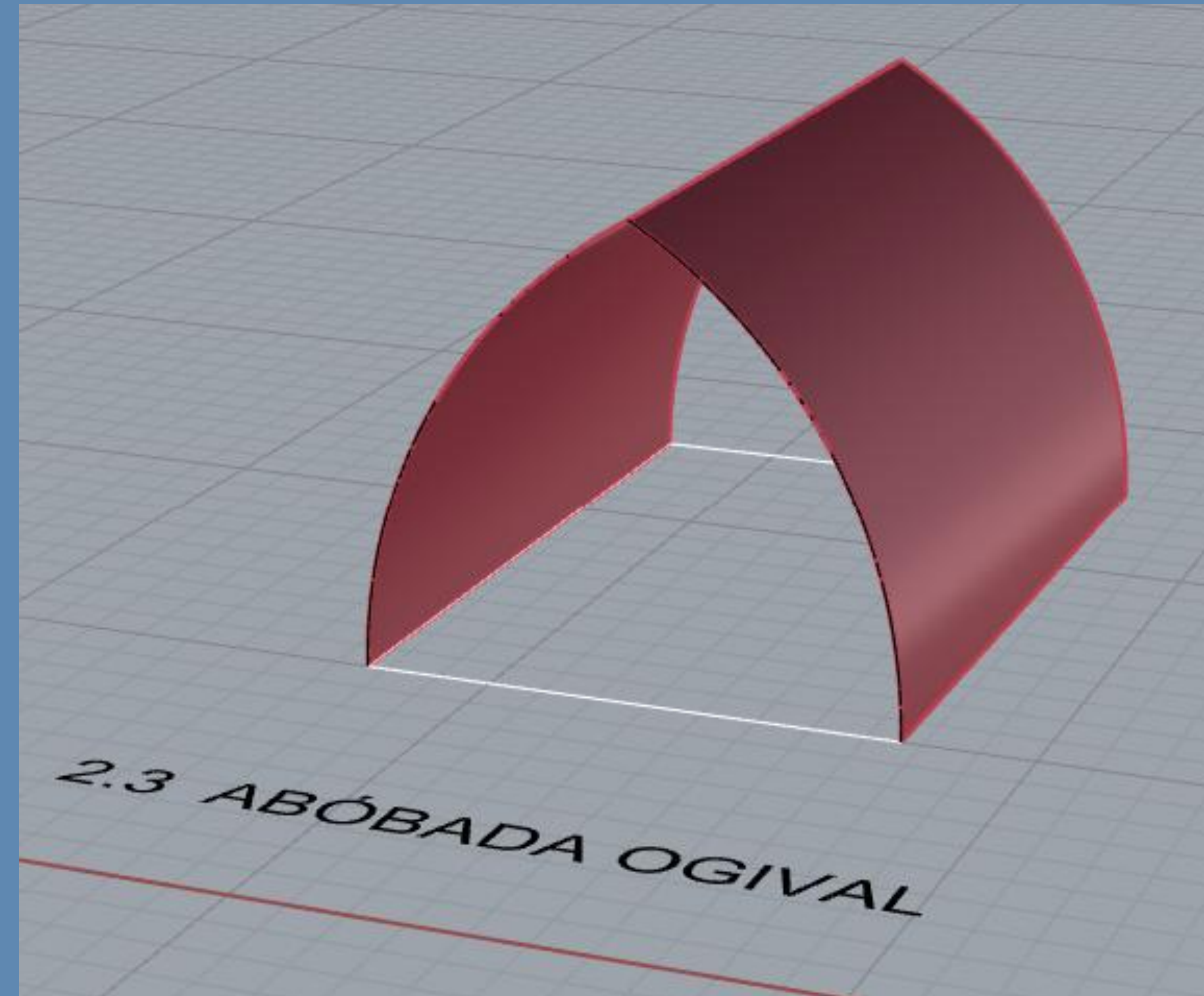
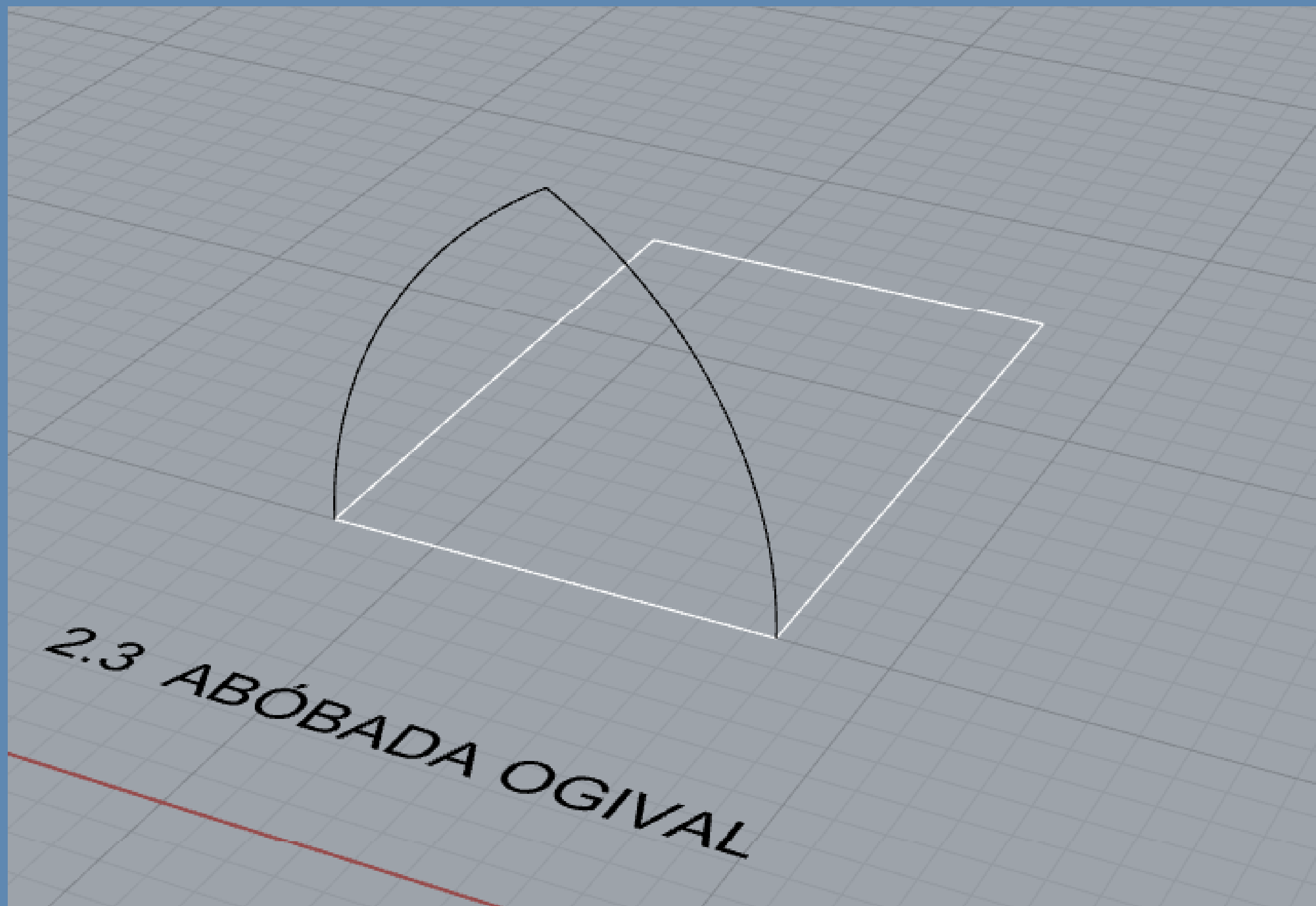
ABÓBADA DE BERÇO



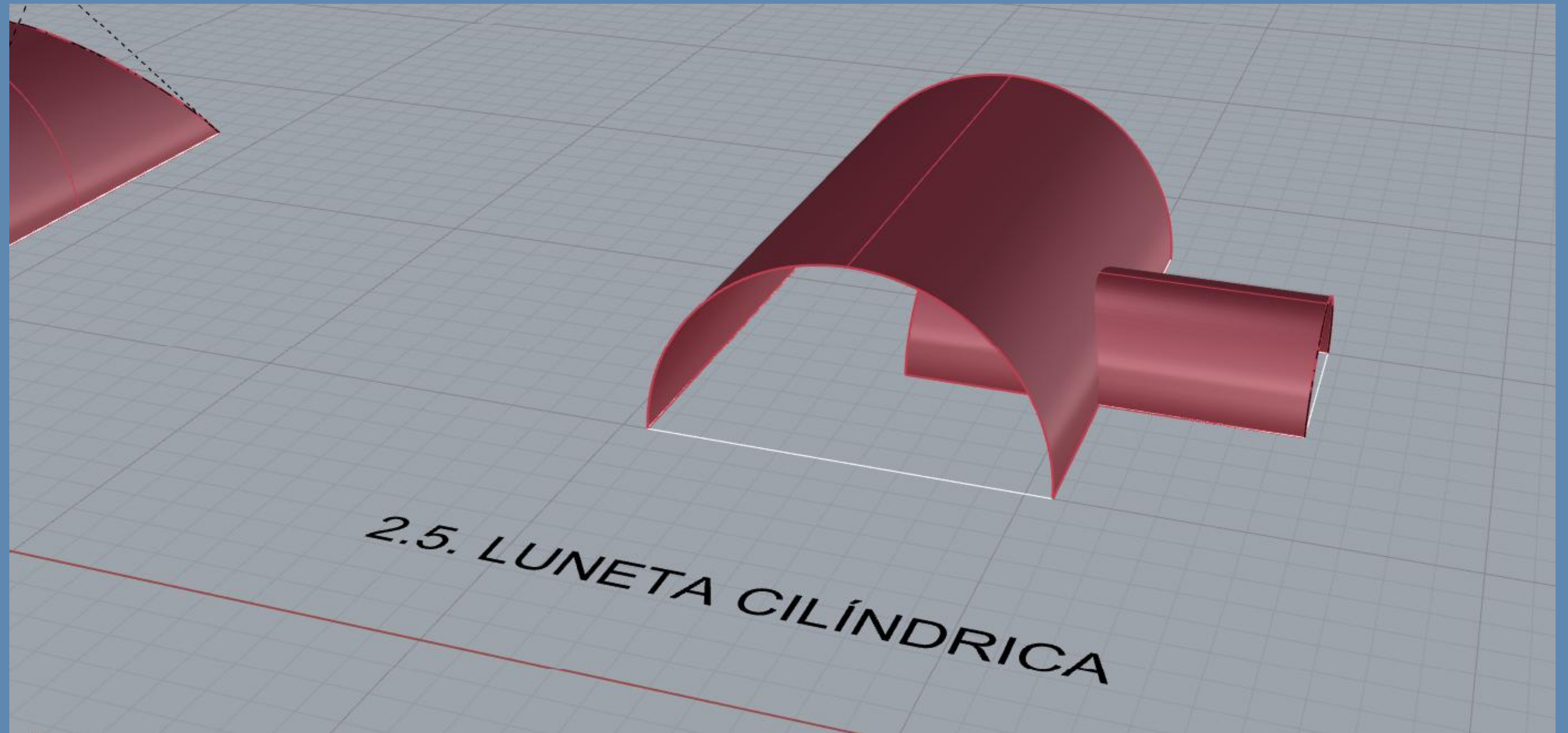
ABÓBADA DE CISTERNA



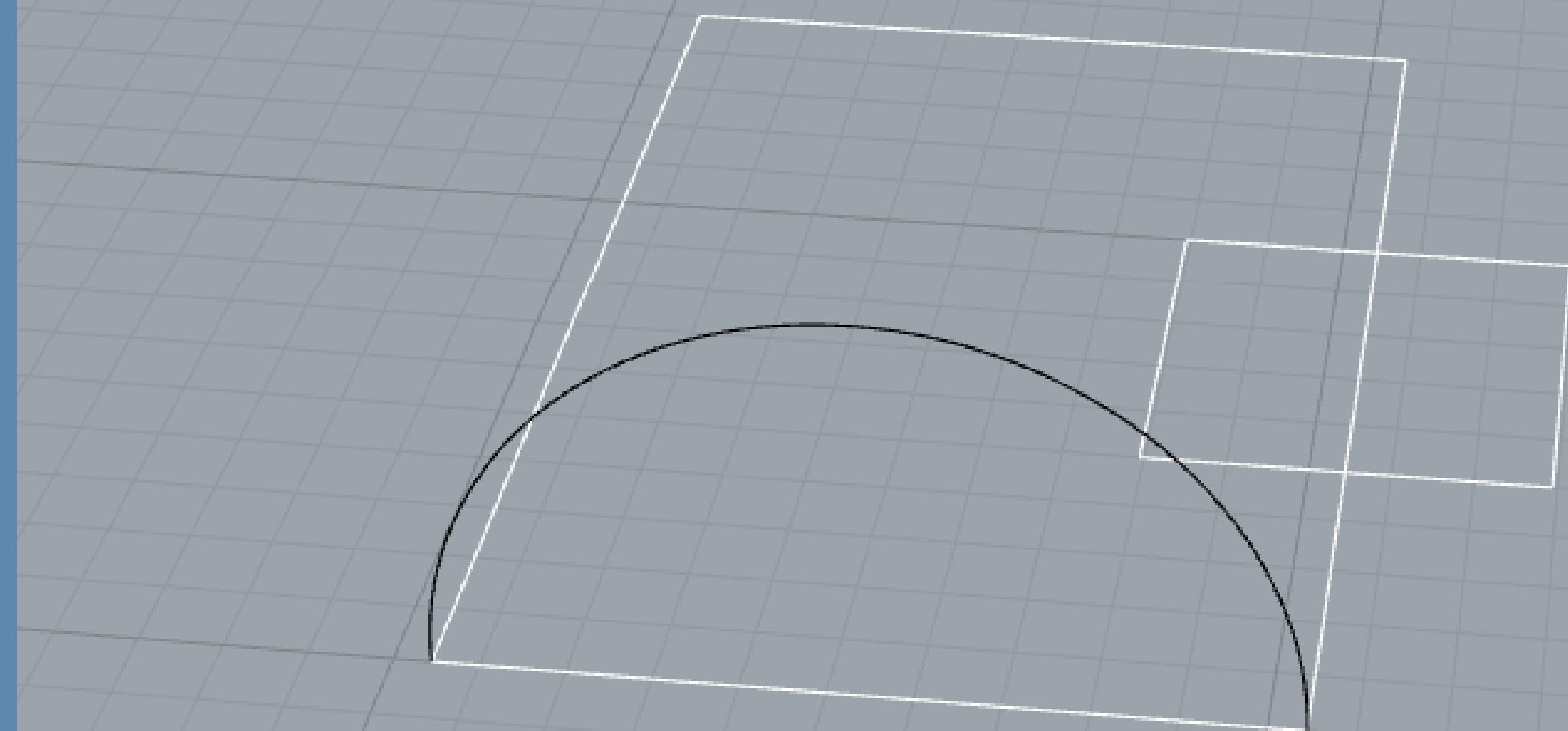
ABÓBADA ABATIDA



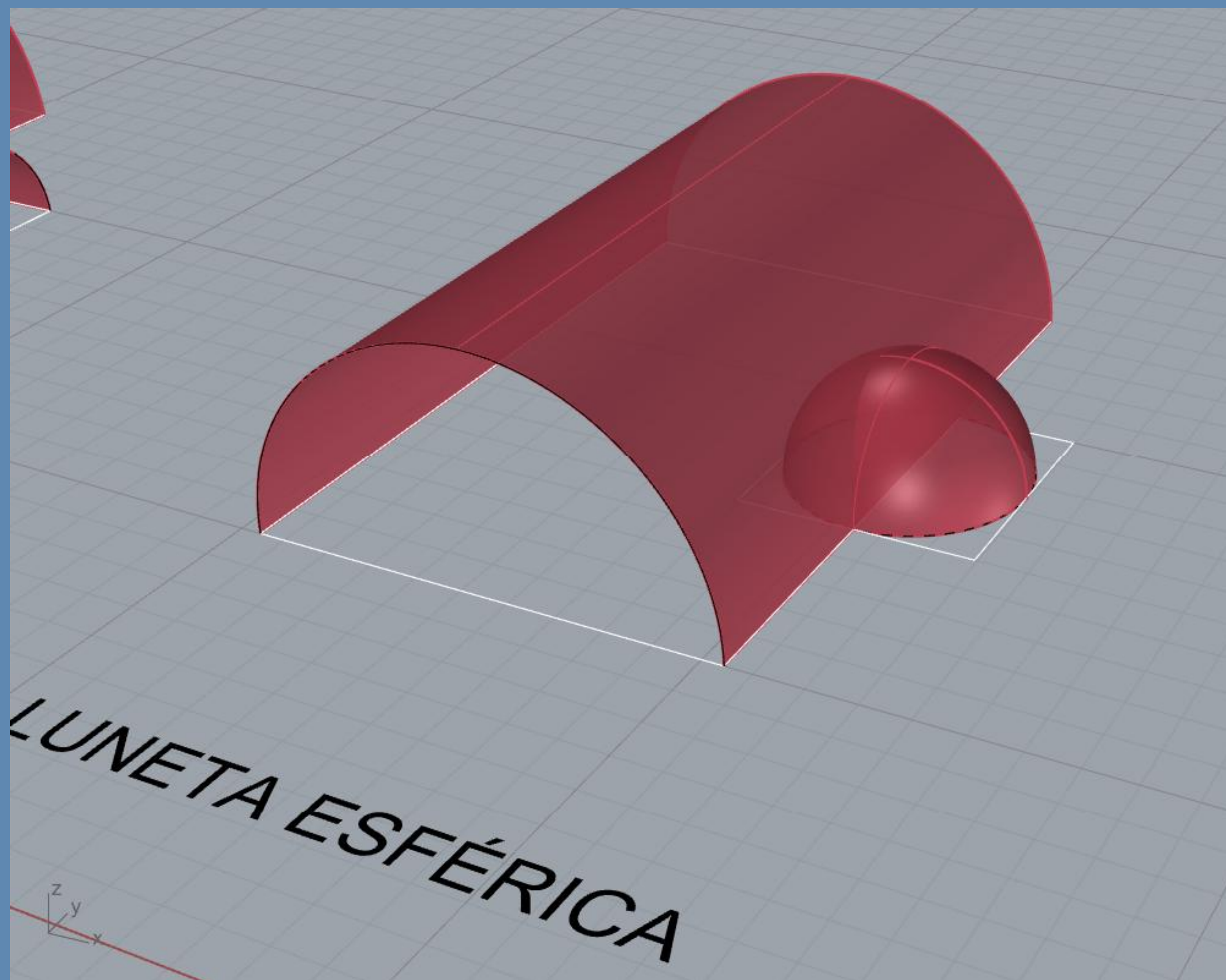
ABÓBADA OGIVAL



LUNETA CILÍNDRICA

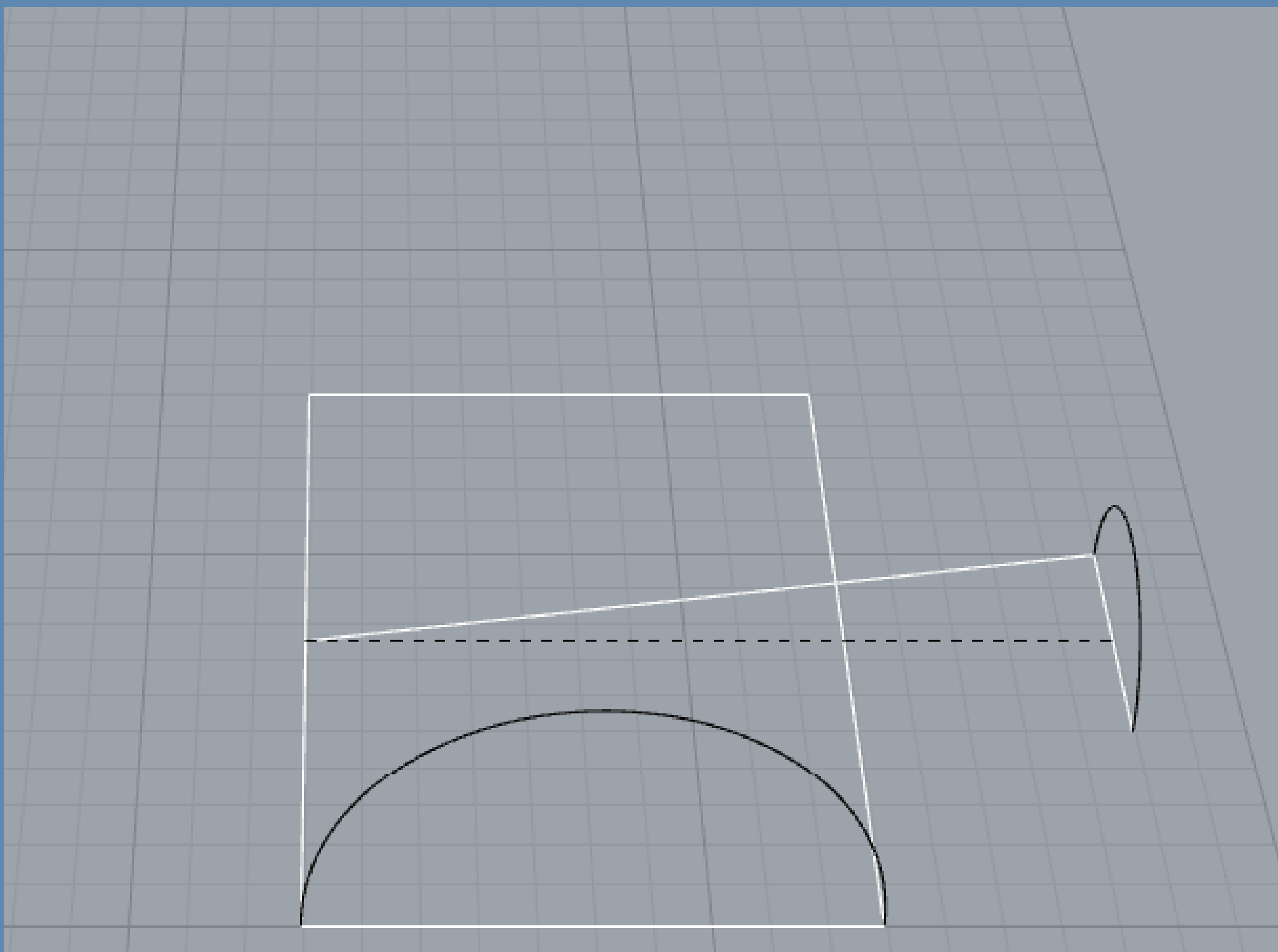


2.6. LUNETAS ESFÉRICAS



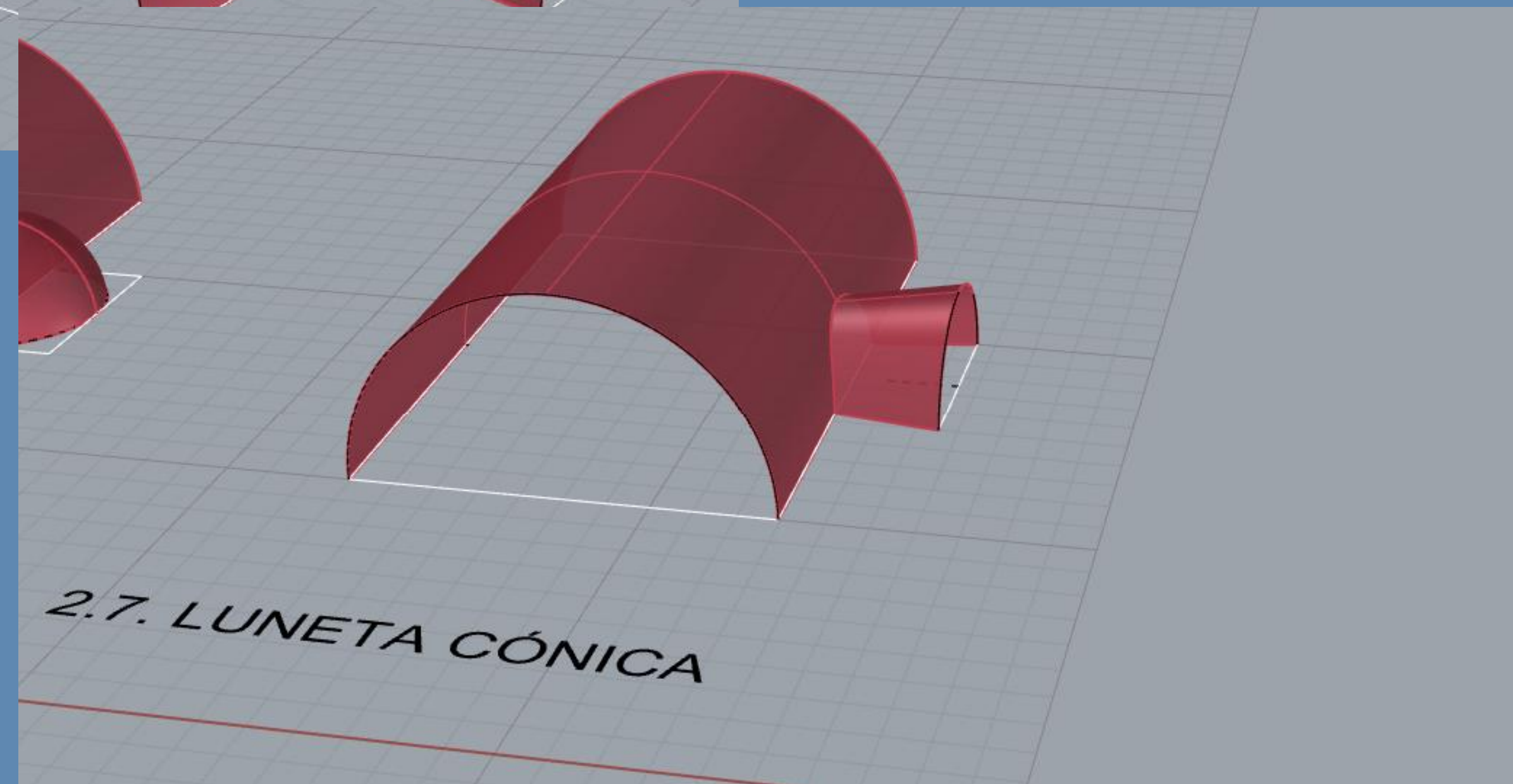
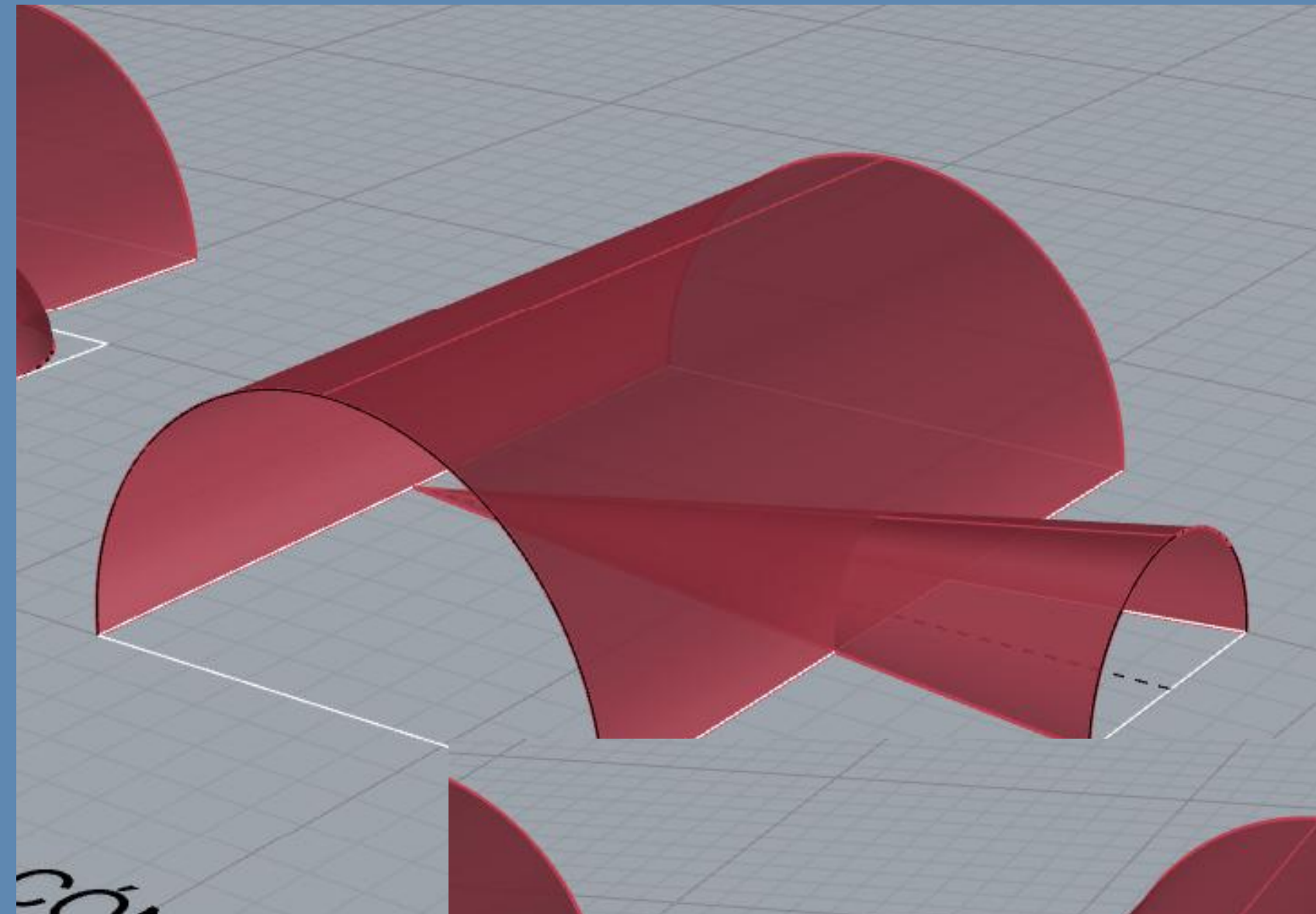
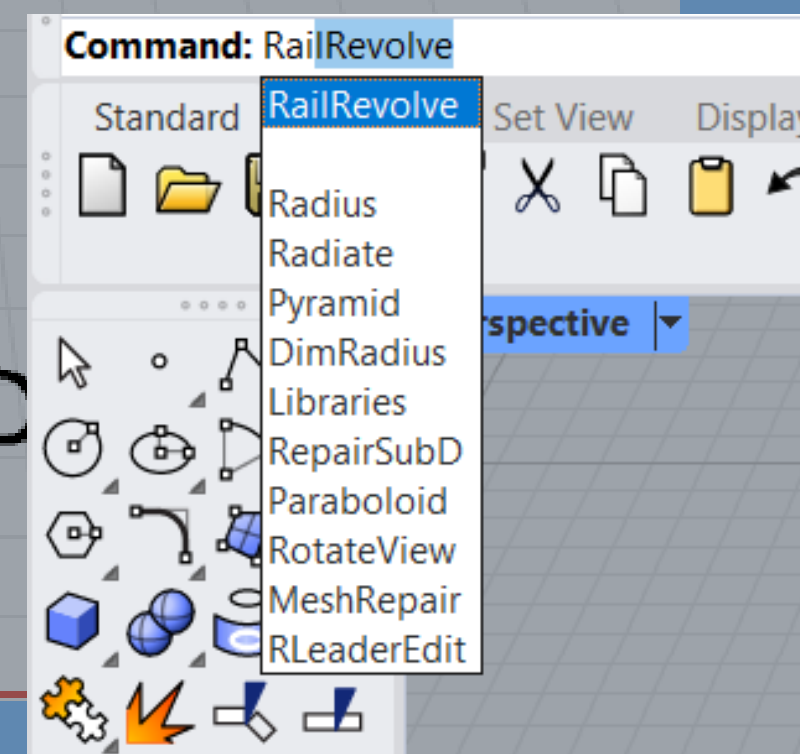
LUNETAS ESFÉRICAS

LUNETAS ESFÉRICAS



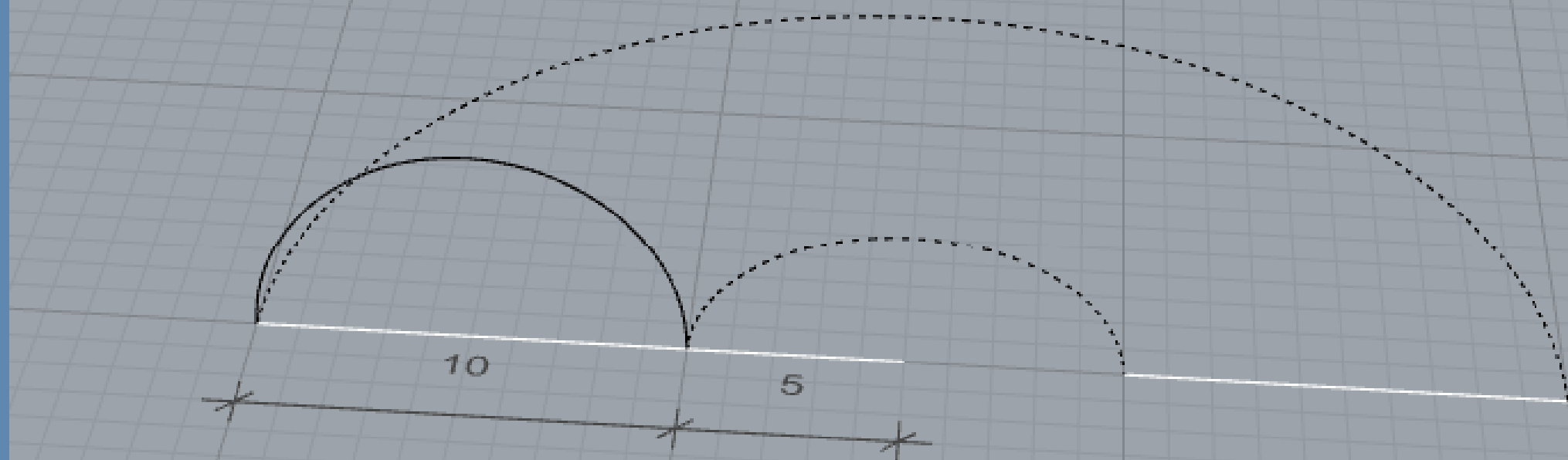
2.5. LUNETA CILÍNDRICA

RAILREVOLVE

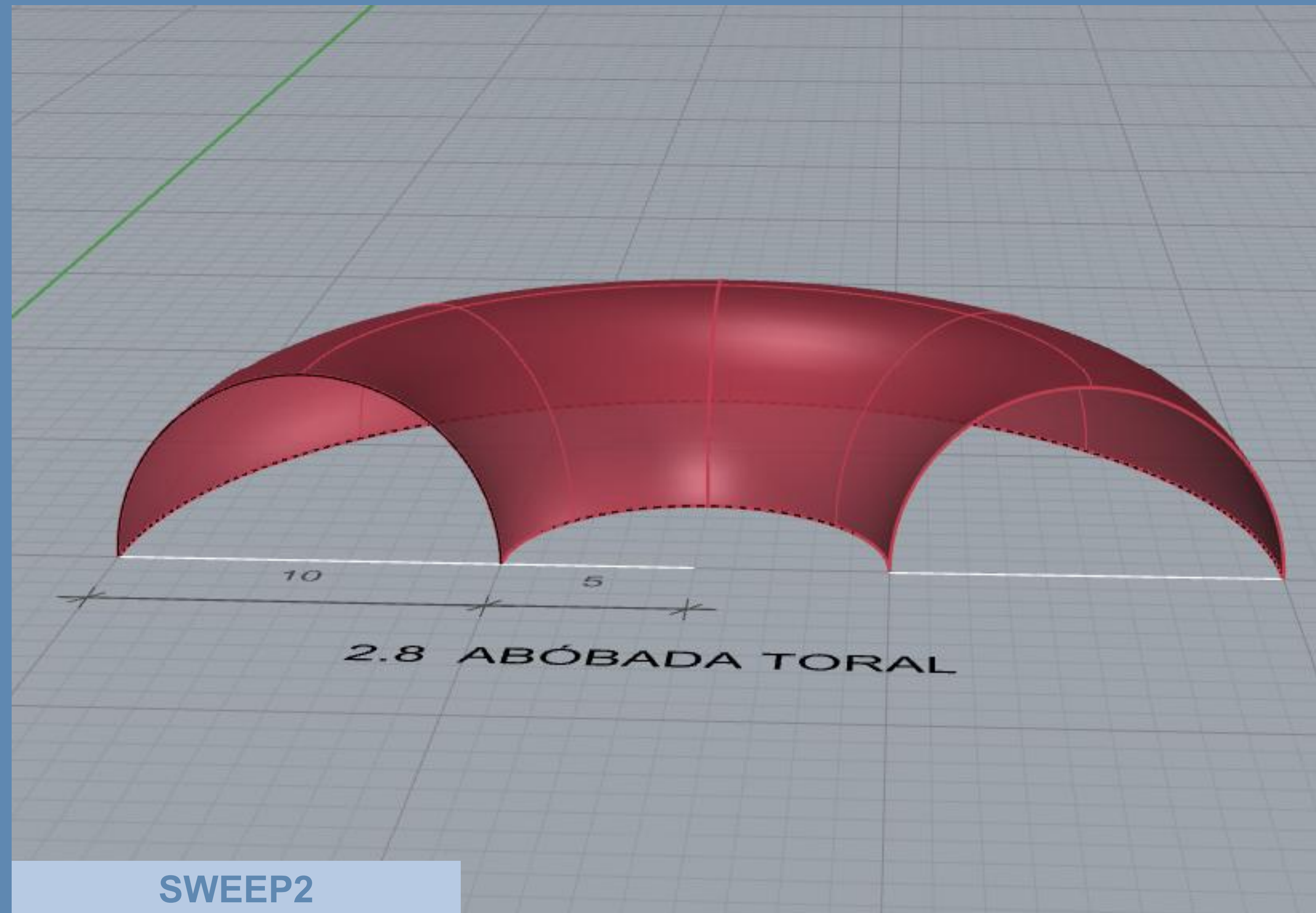


2.7. LUNETA CÓNICA

LUNETA CÓNICA



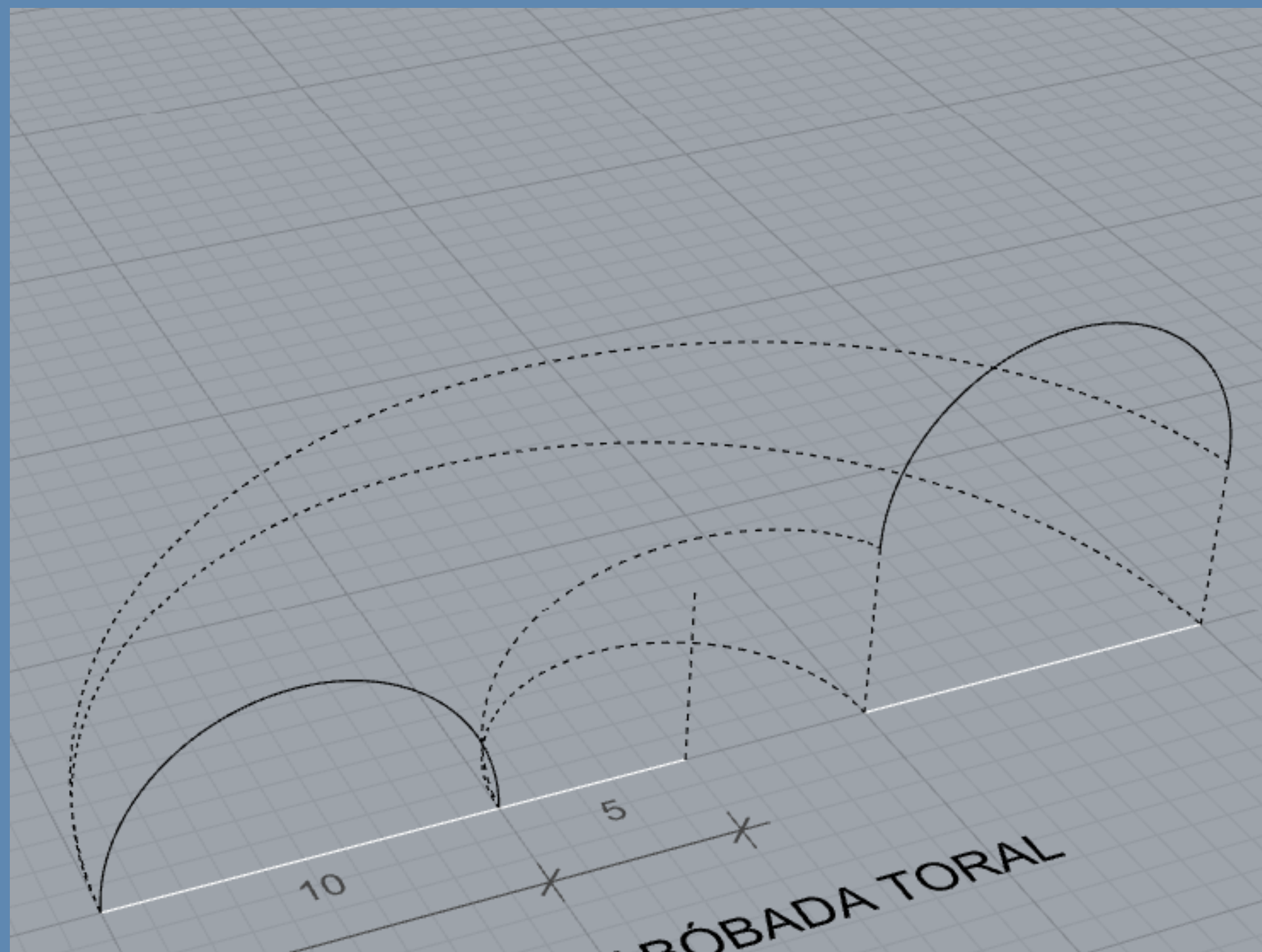
2.1 ABÓBADA DE BERÇO



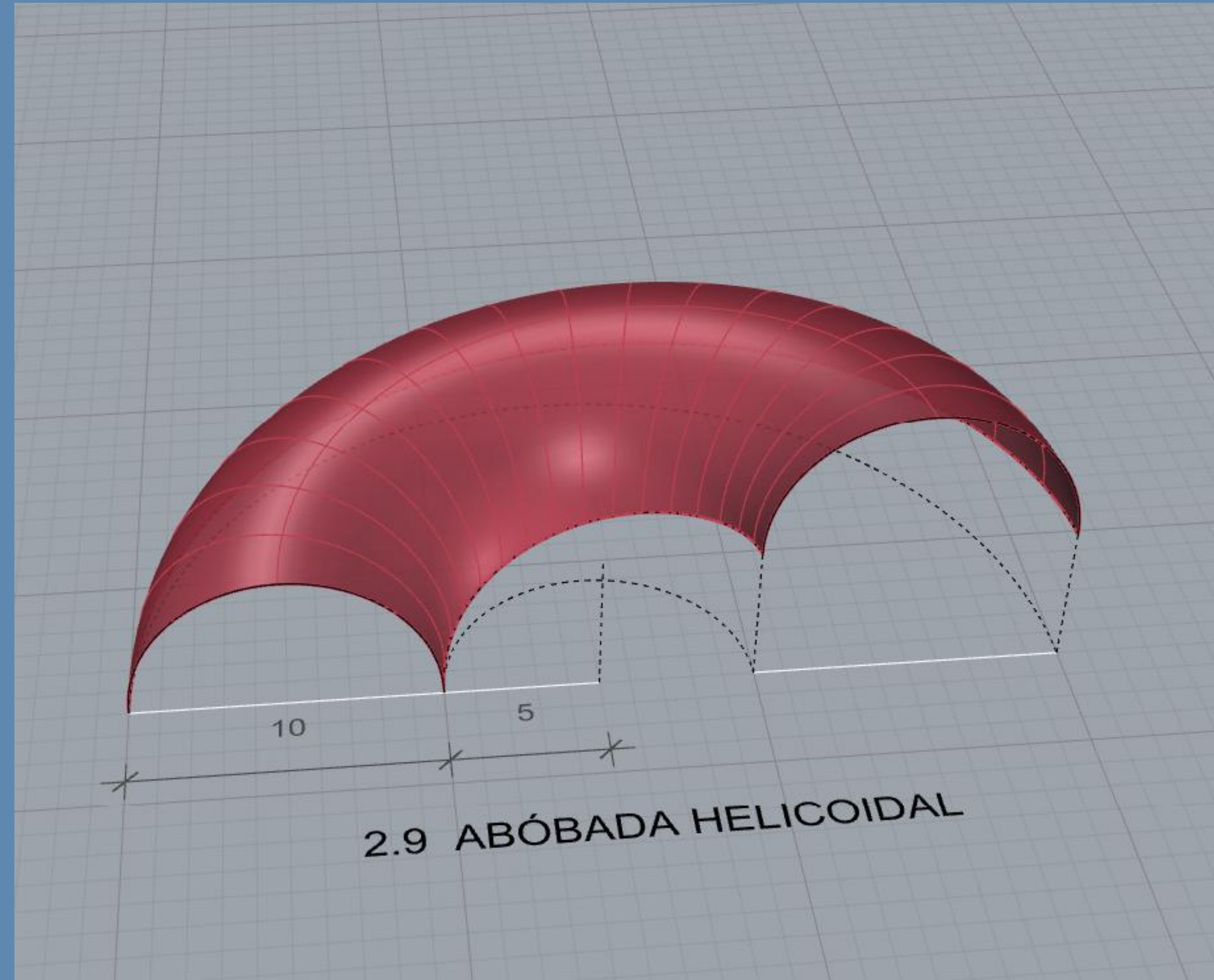
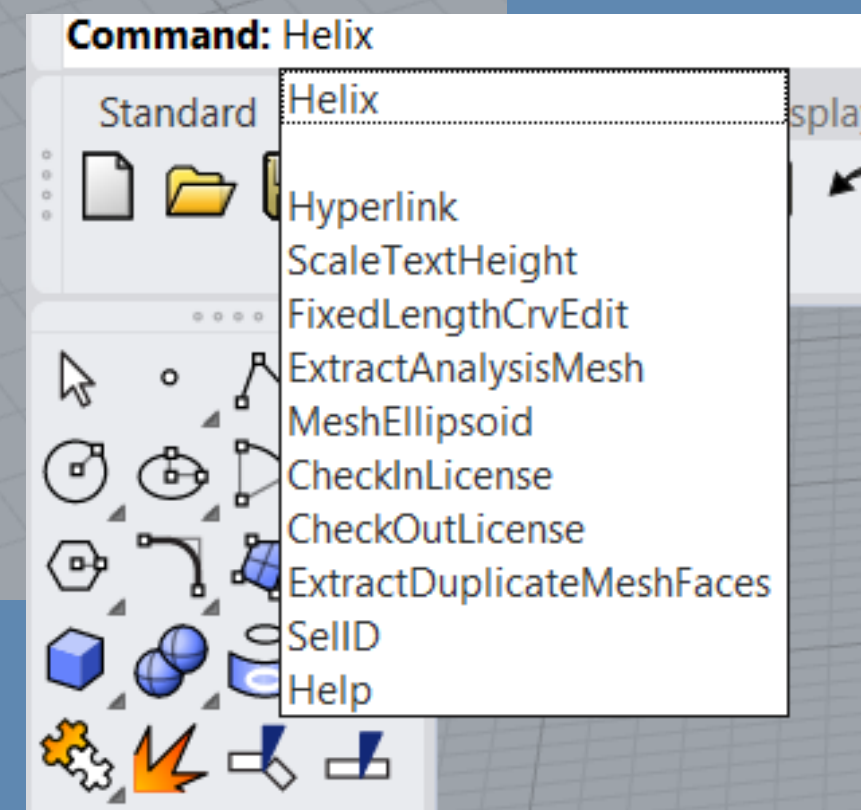
SWEEP2

2.8 ABÓBADA TORAL

ABÓBADA TORAL

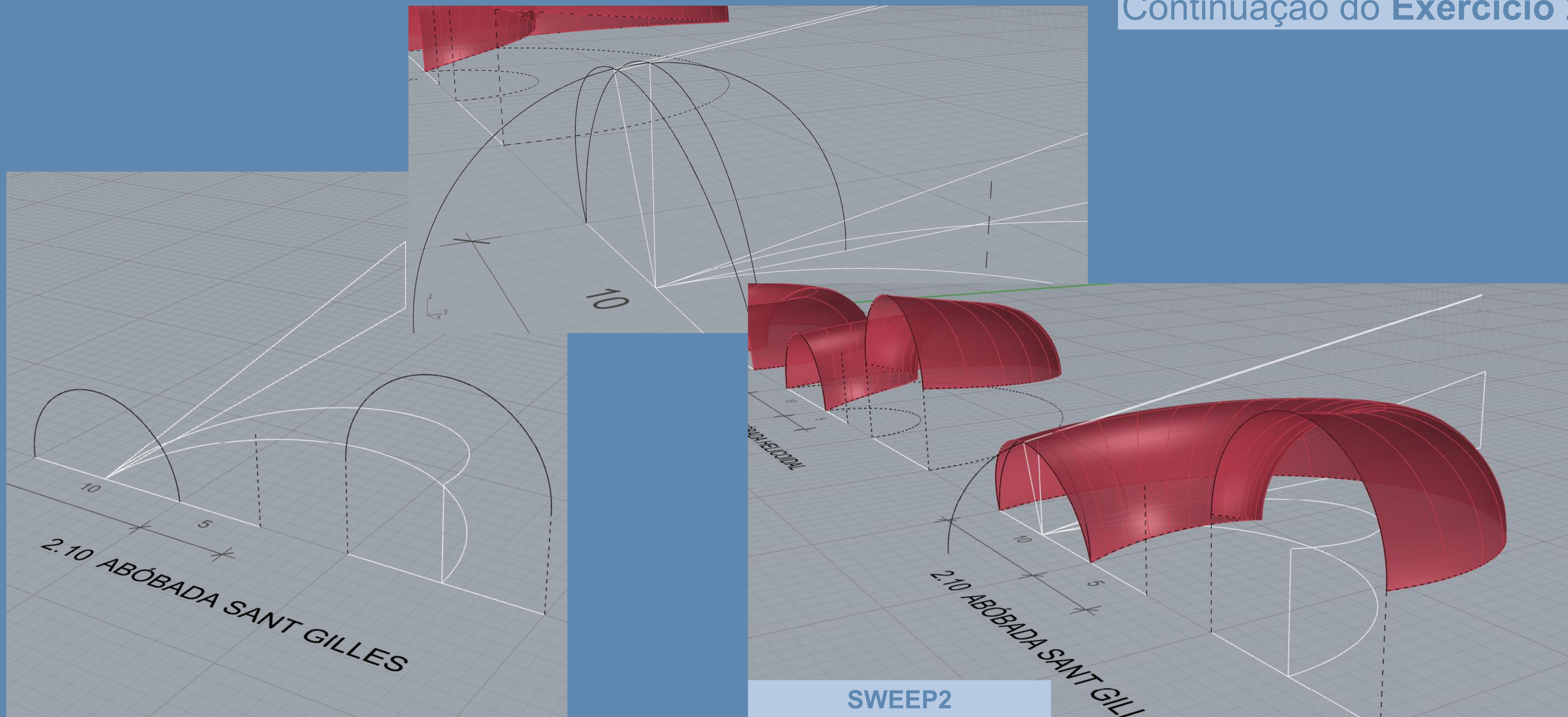


HÉLIX

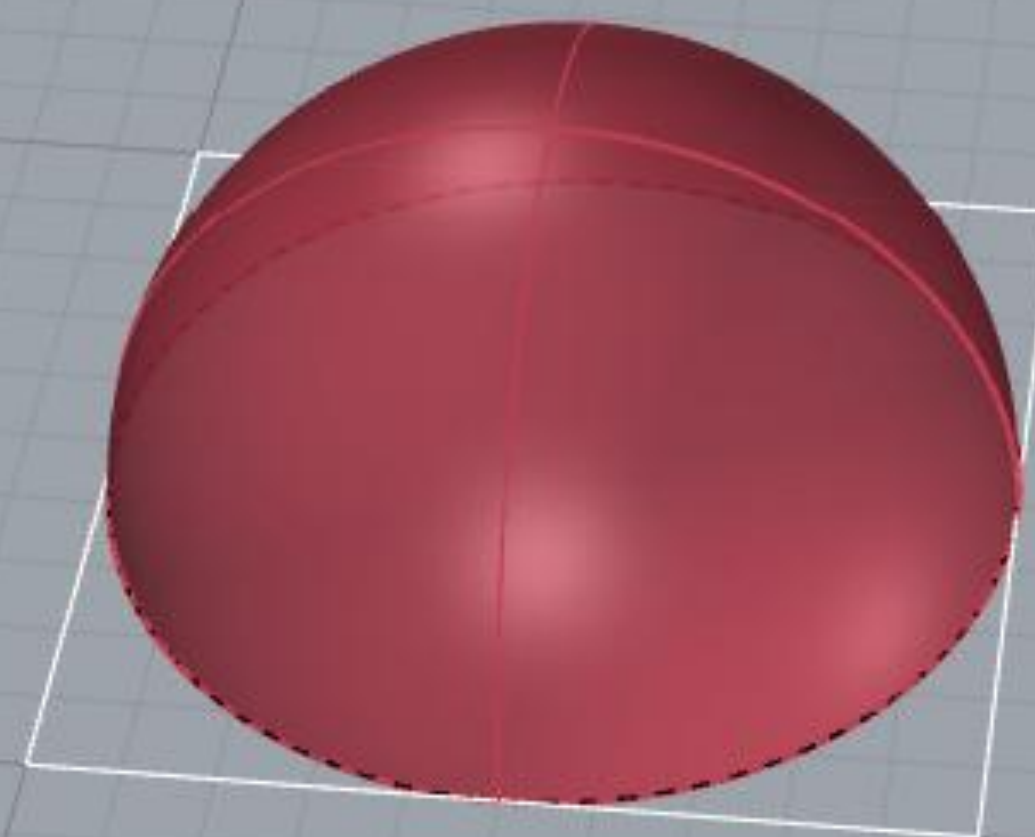


ABÓBADA HELICOIDAL

AULA. 7 – CONTINUAÇÃO DAS ABÓBADAS

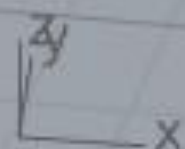


ABÓBADA SANT GILLES

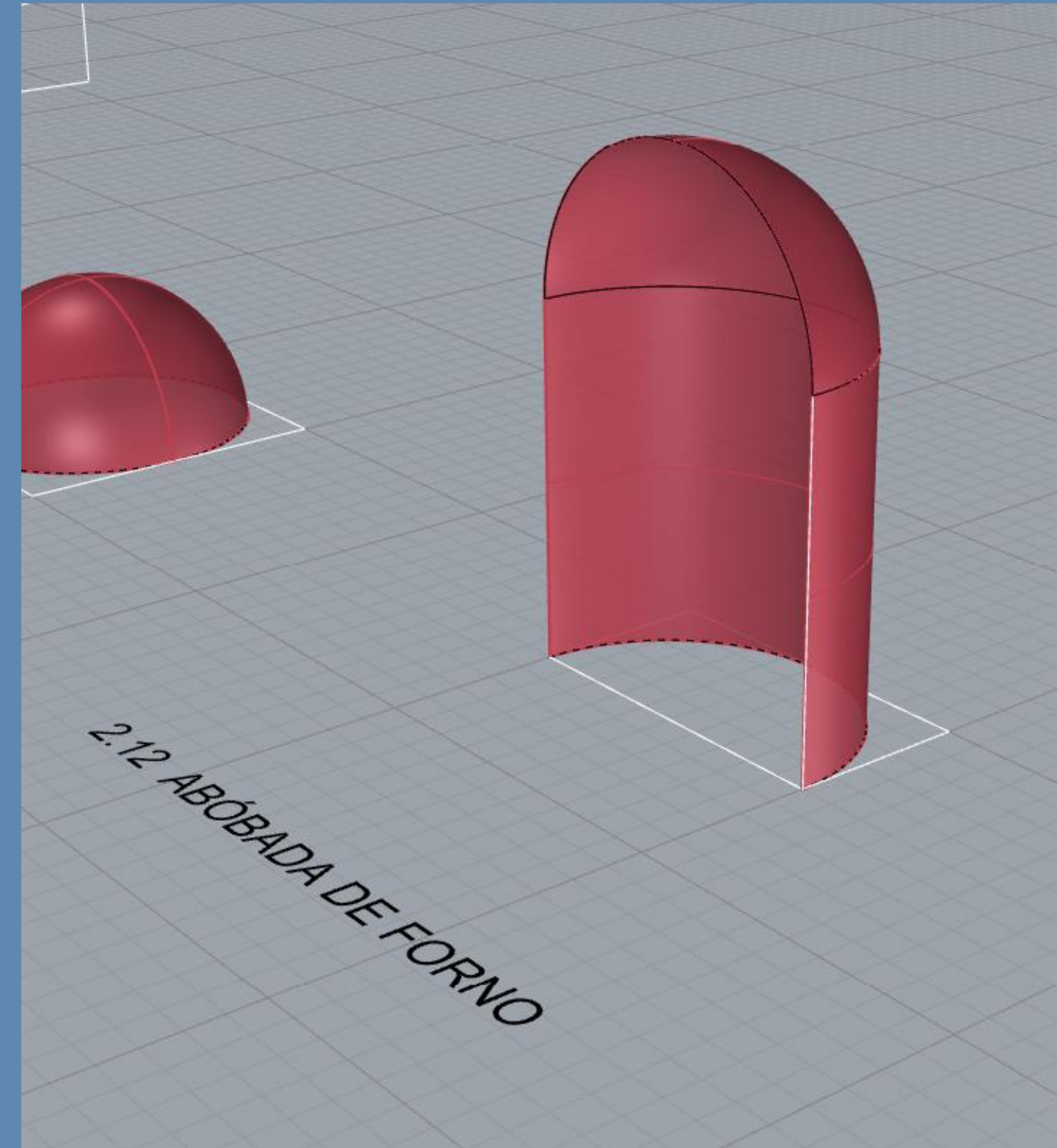
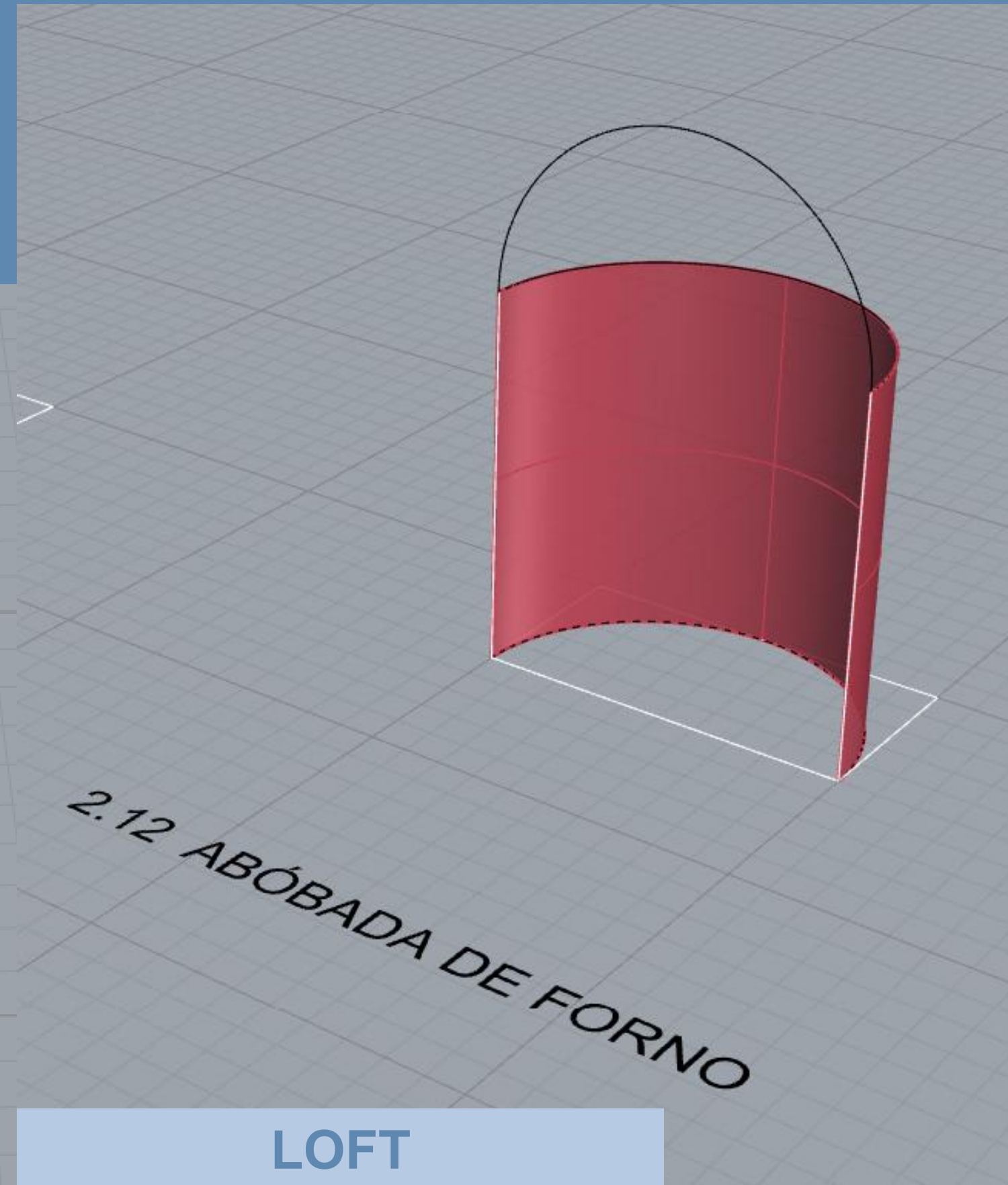


2.11 ABÓBADA ESFÉRICA

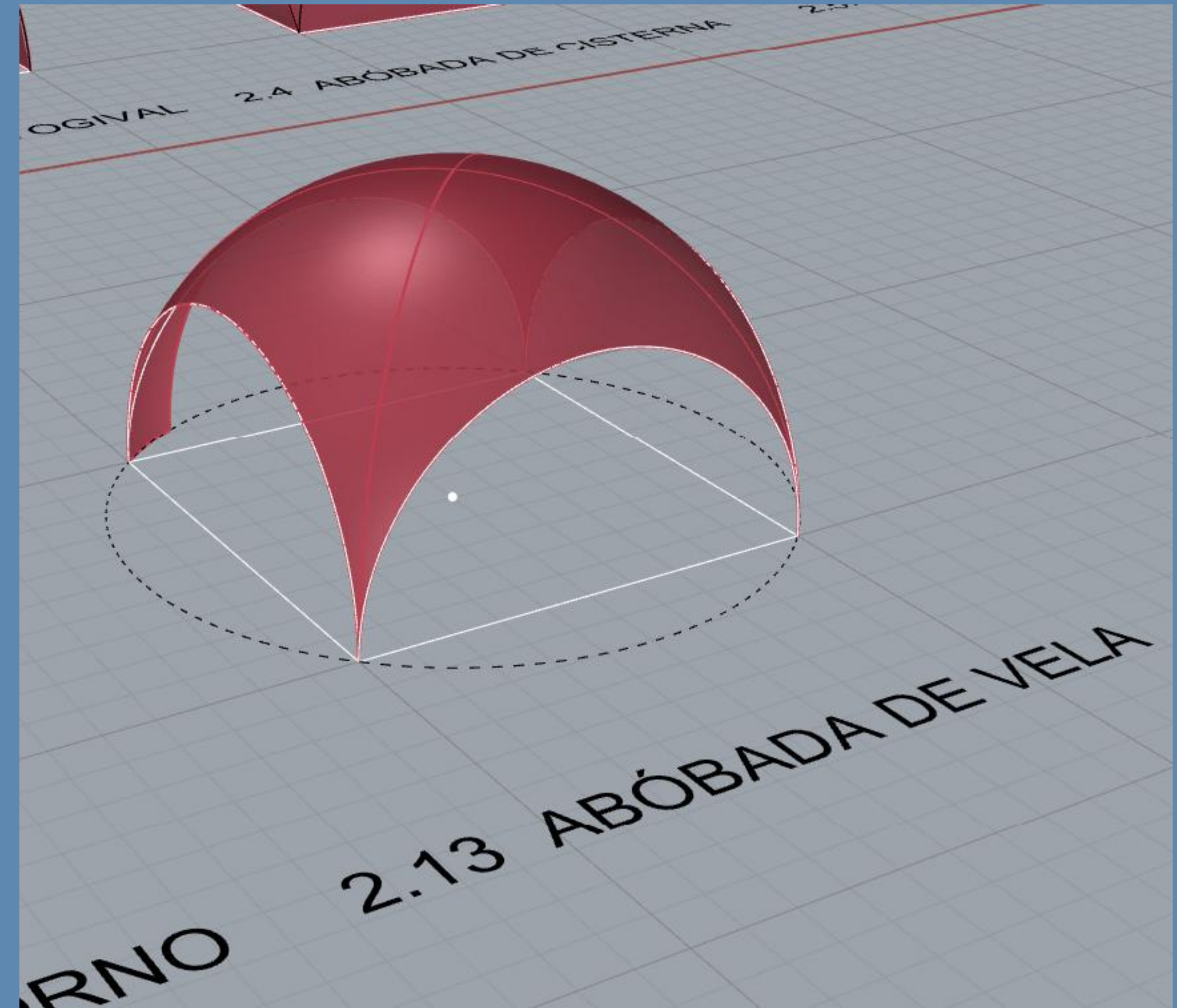
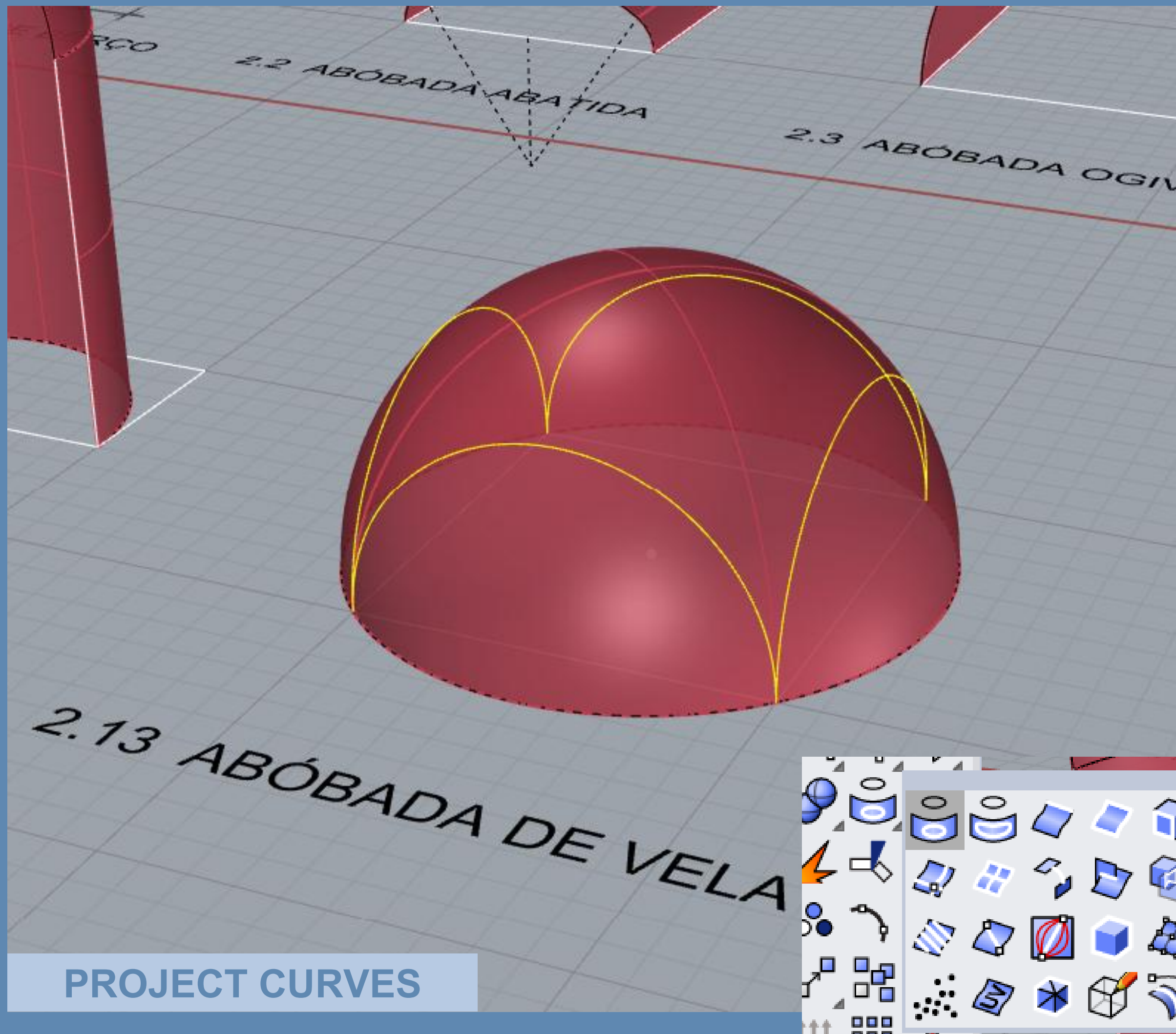
2.12 ABC



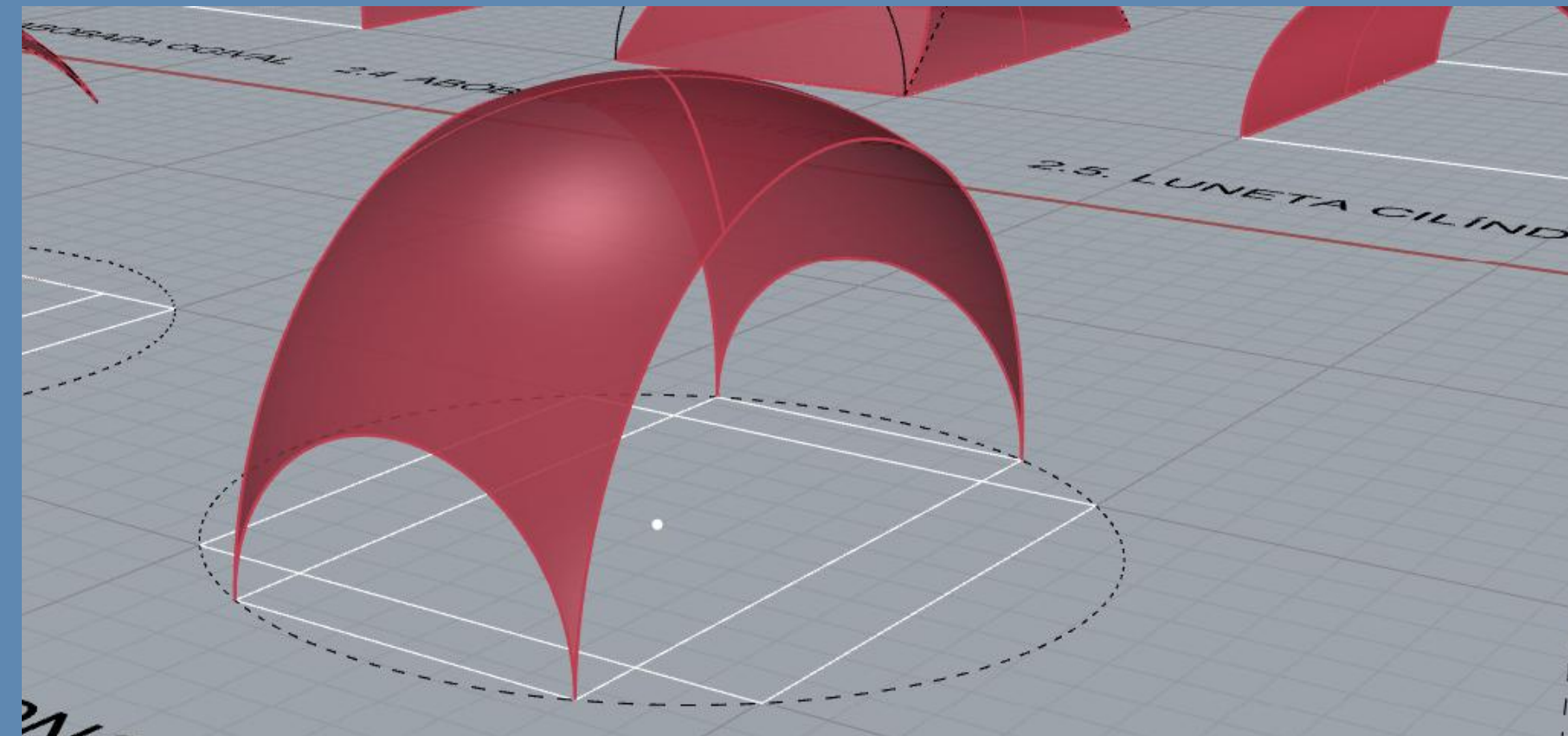
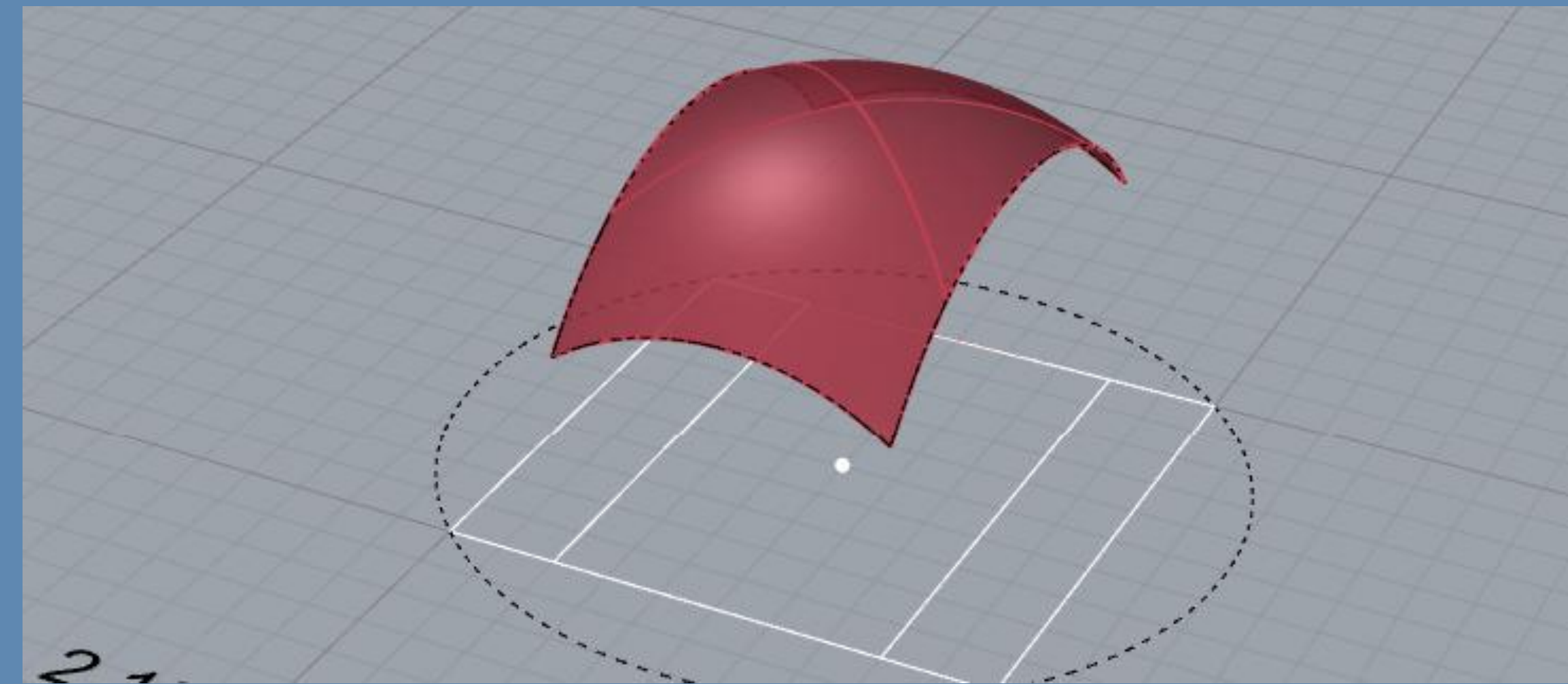
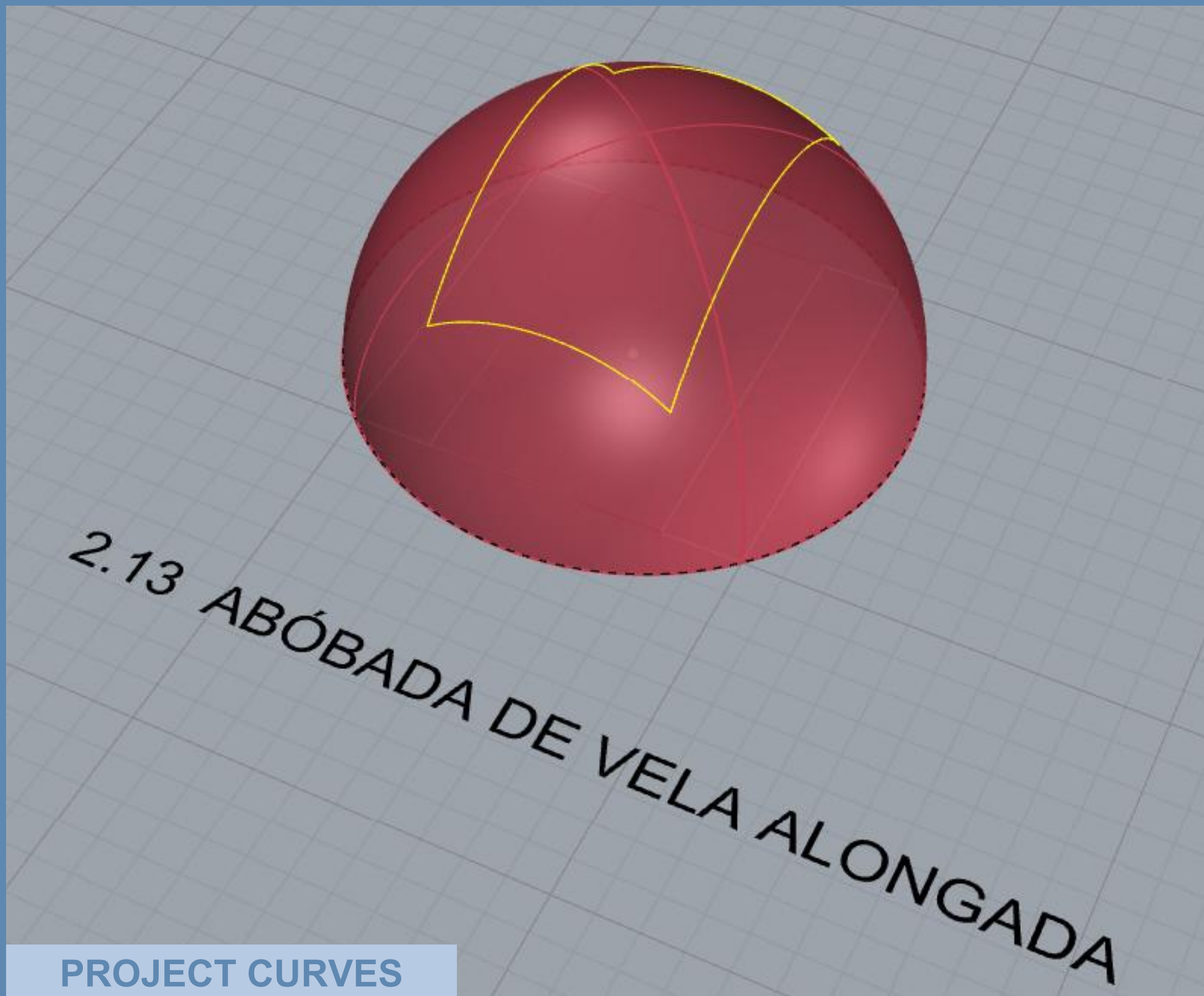
ABÓBADA ESFÉRICA



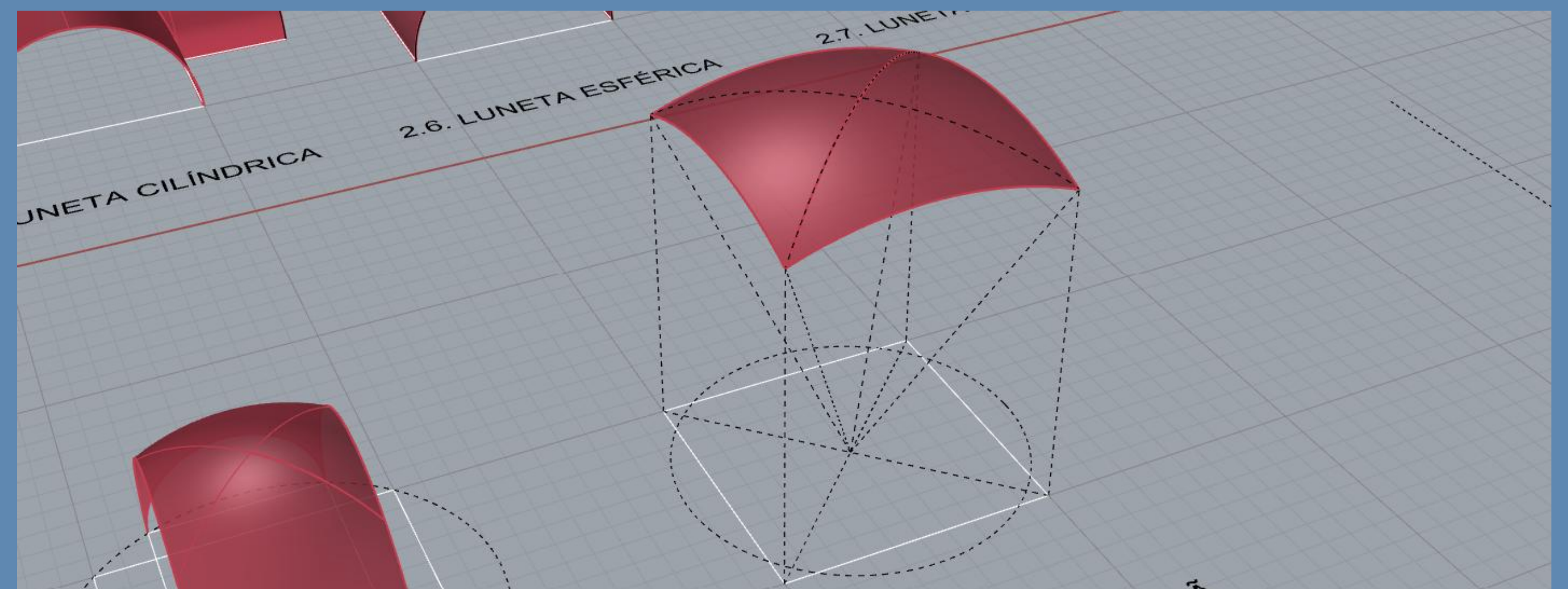
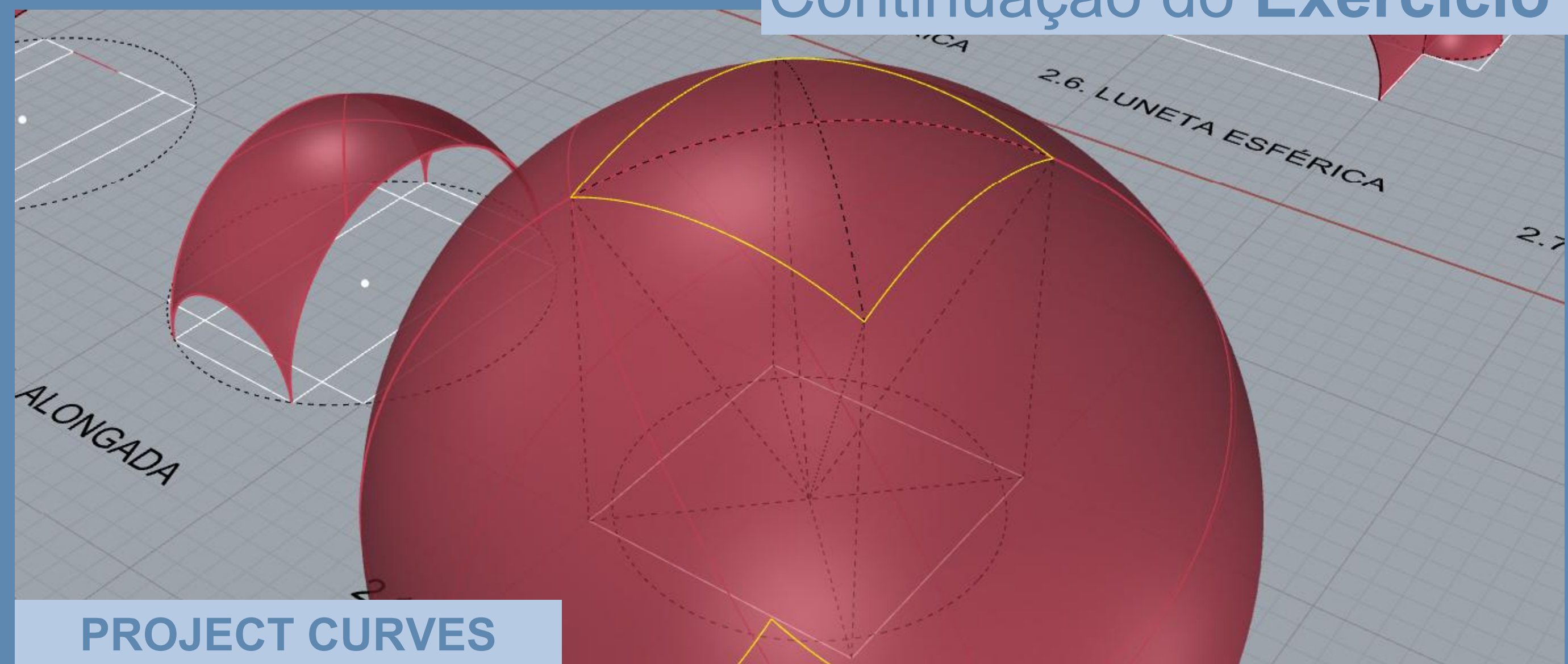
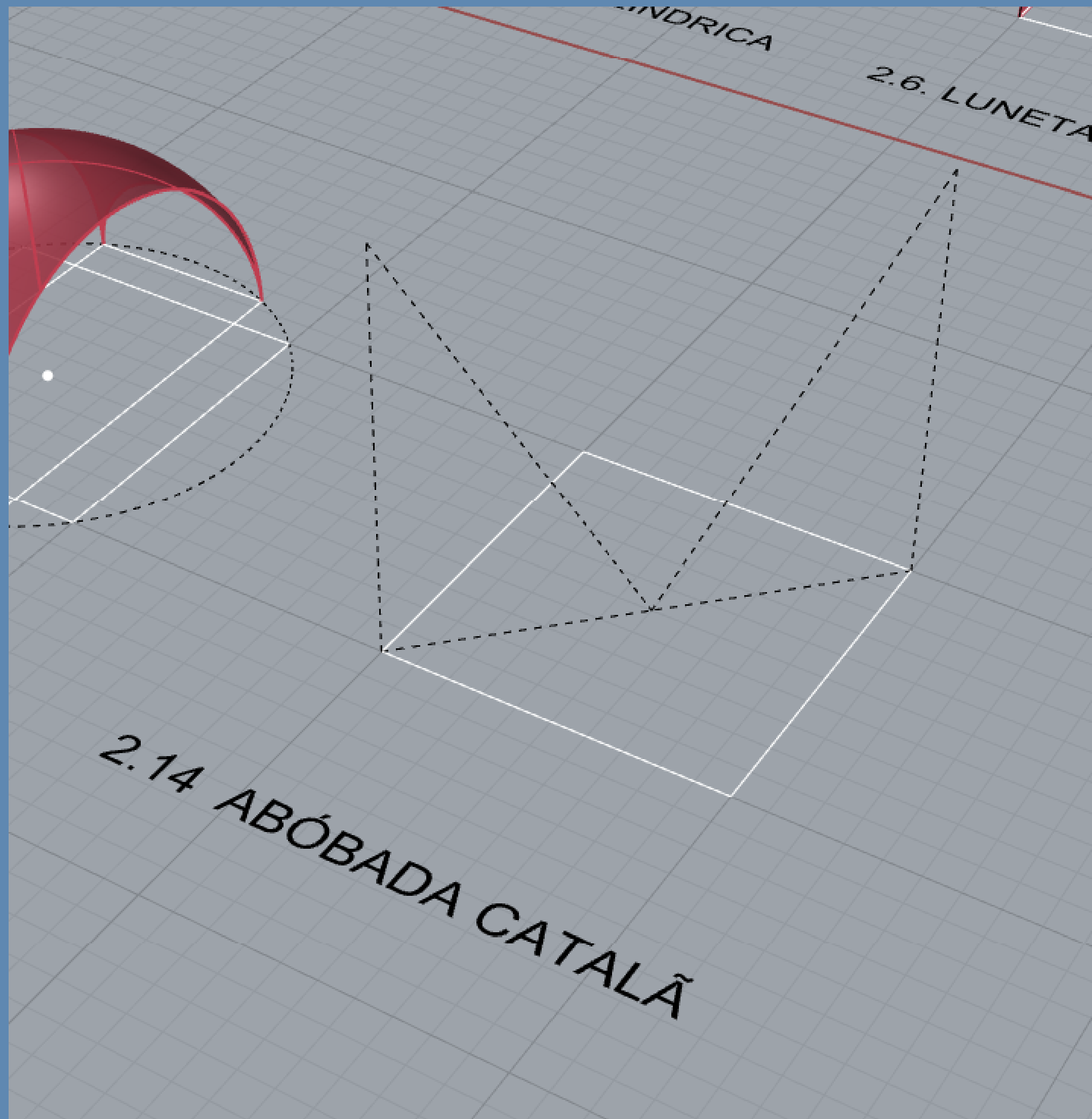
ABÓBADA DE FORNO



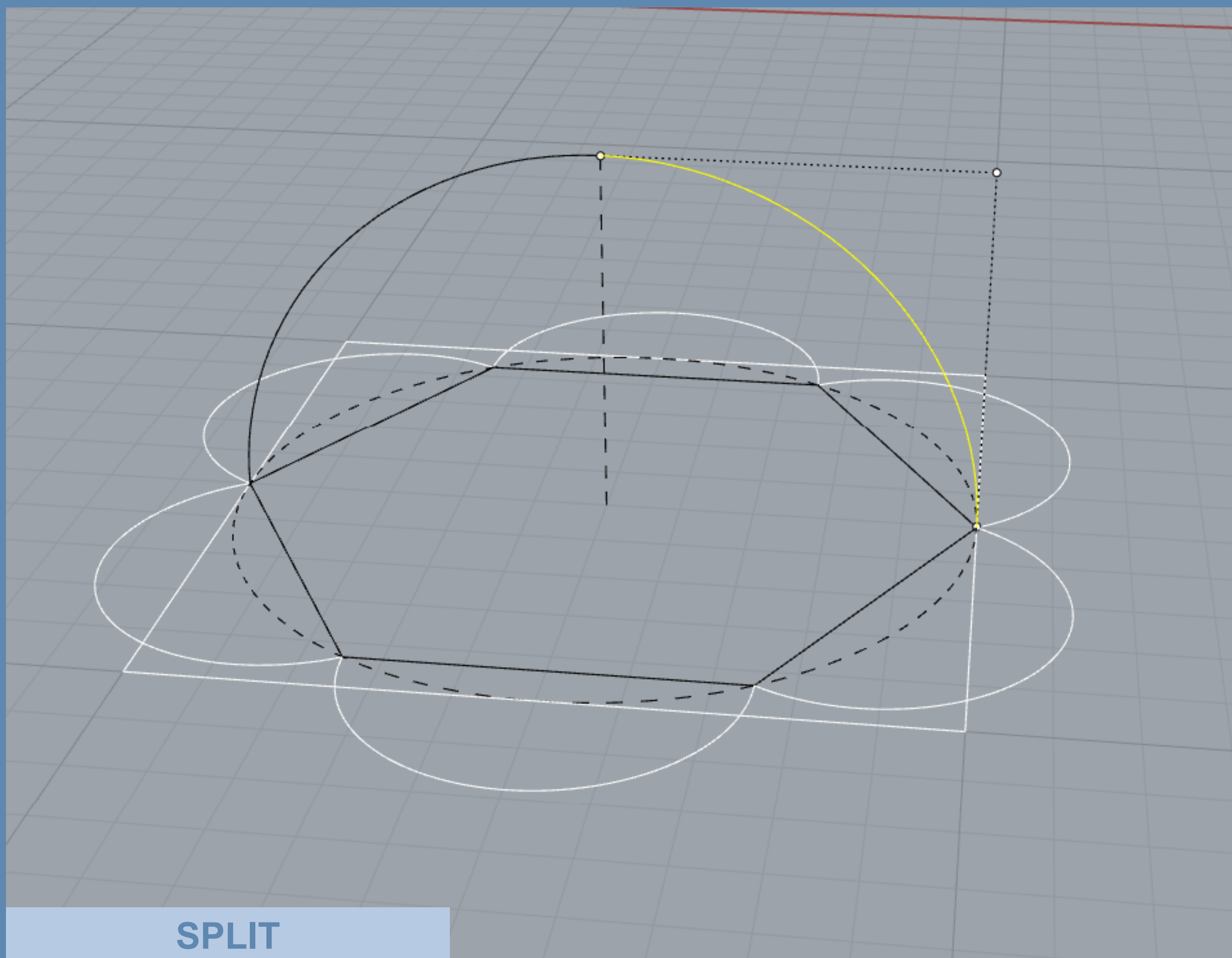
ABÓBADA DE VELA



ABÓBADA DE VELA ALONGADA



ABÓBADA CATALÃ



ABÓBADA ALVEOLADA

AULA. 8 – FINALIZAÇÃO DO EXERCÍCIO 2 E INTRODUÇÃO AO GRASSHOPPER

2.17 ABÓBADA DE BOLBO
ALVEOLADA

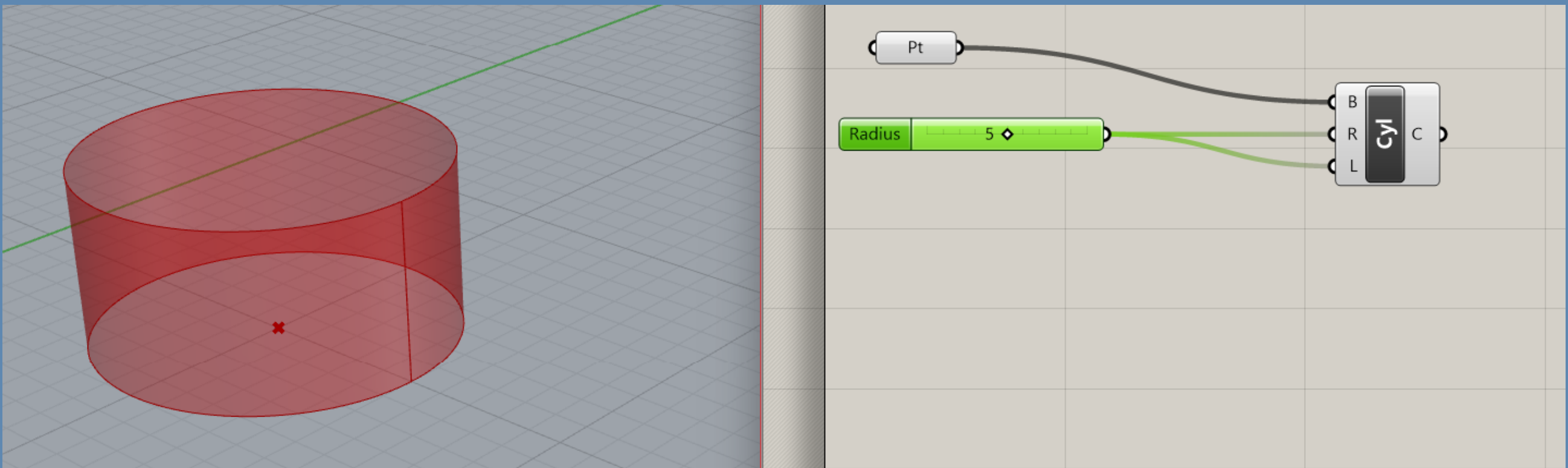
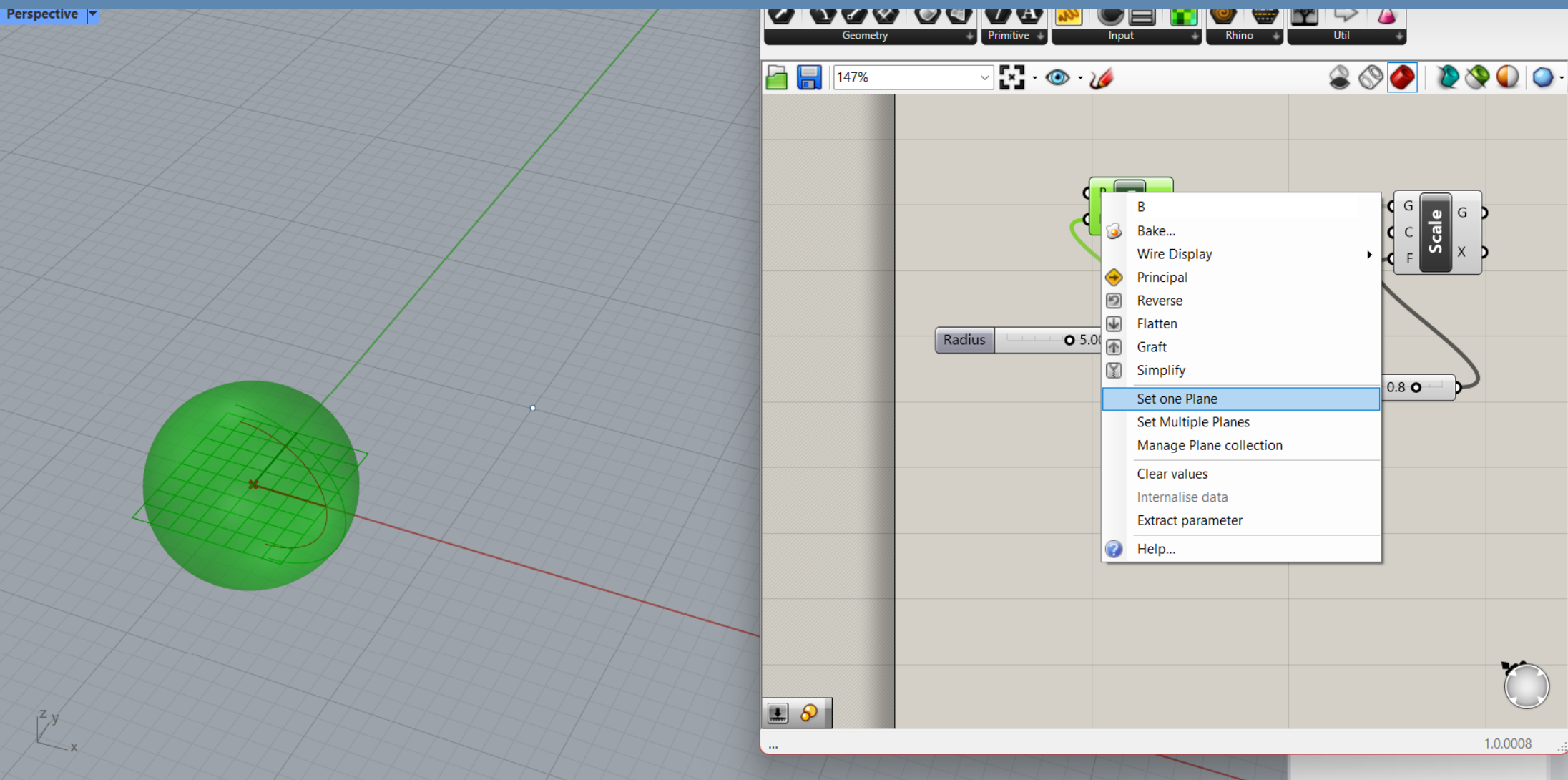
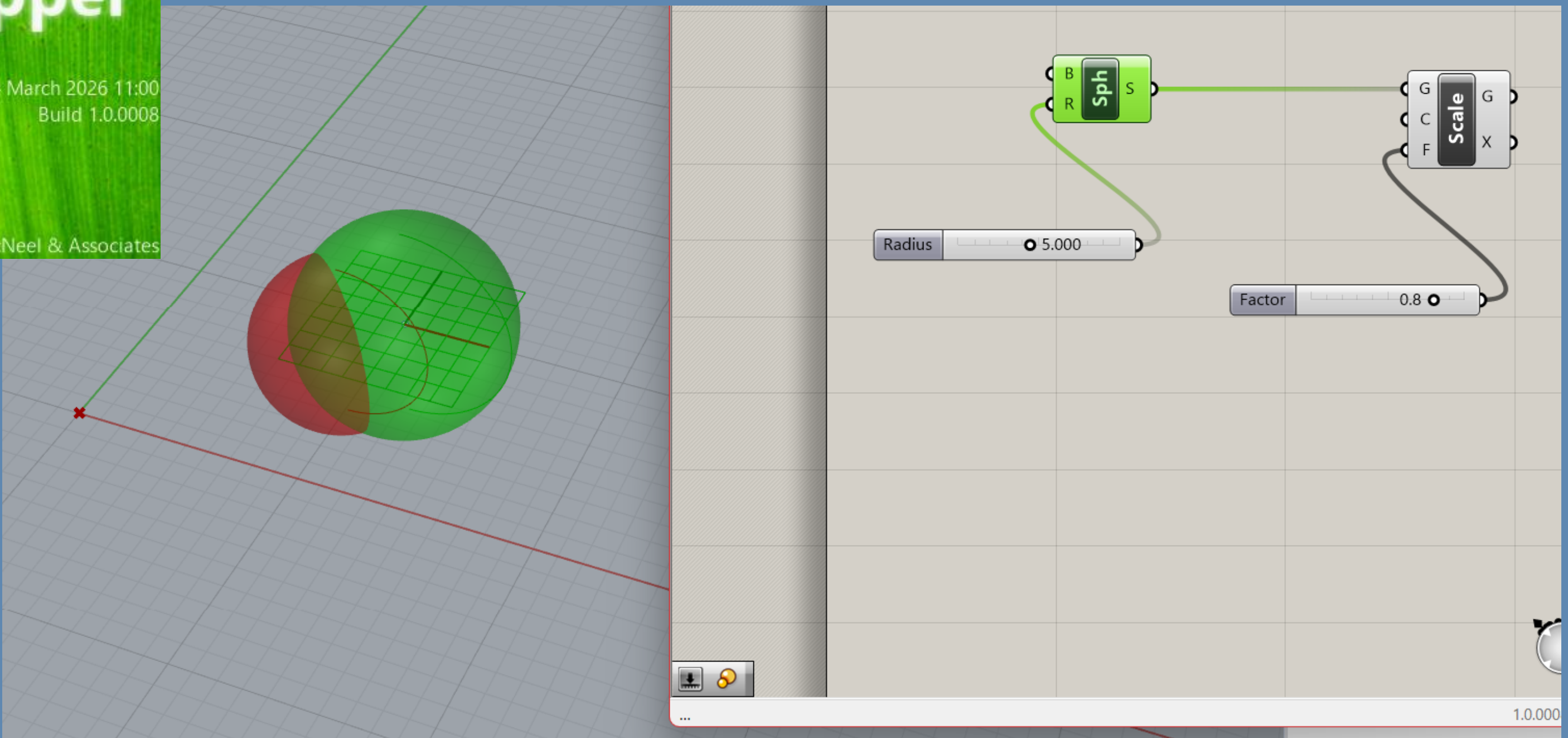
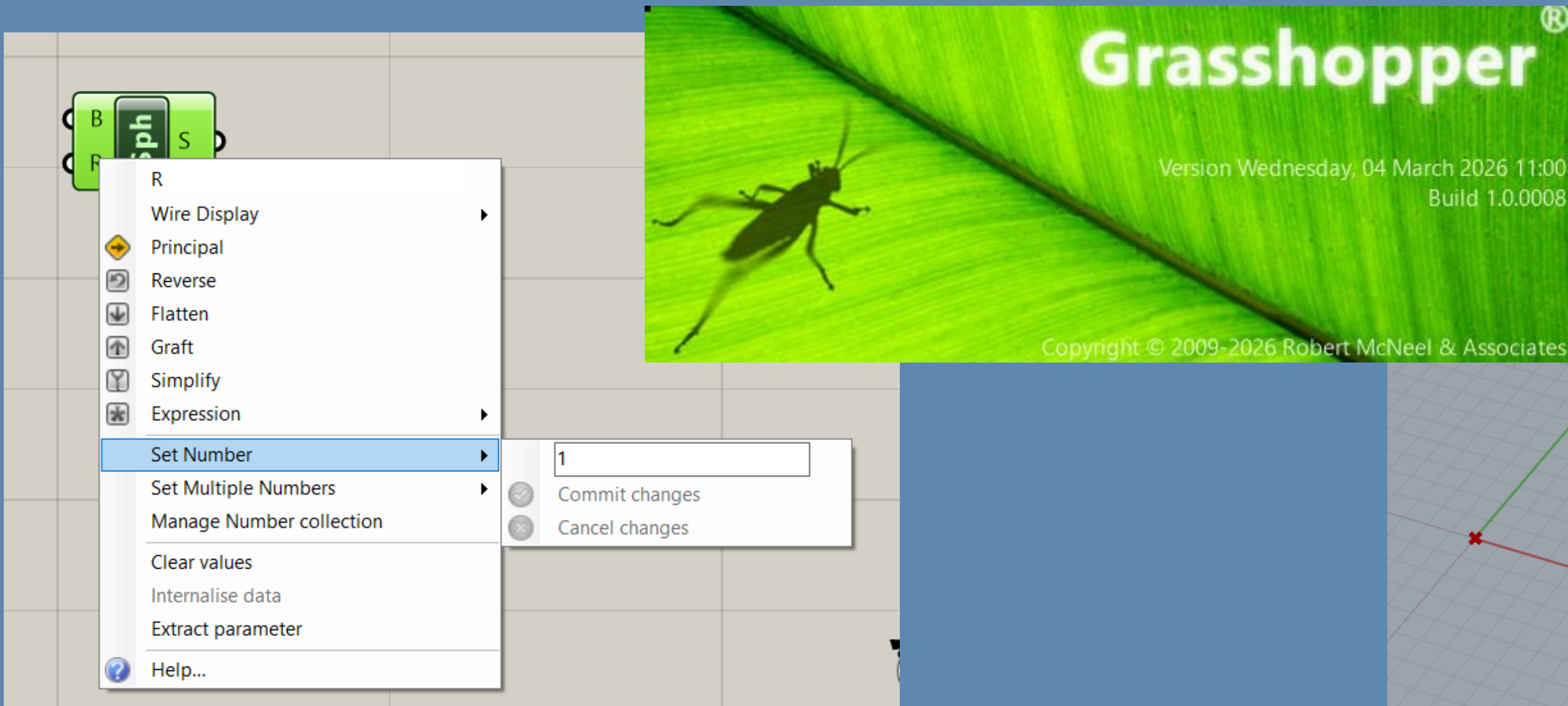
SCALE

ARC

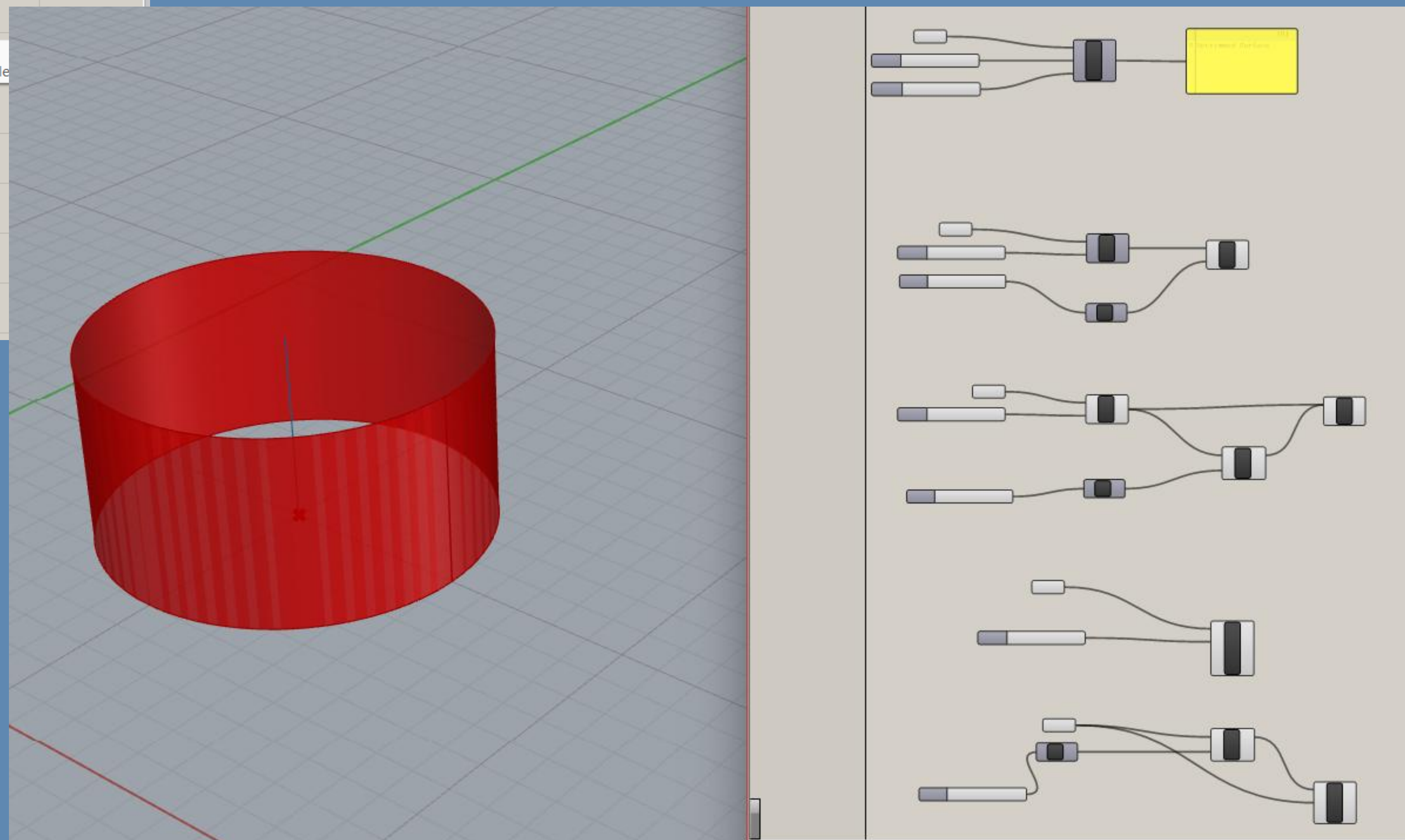
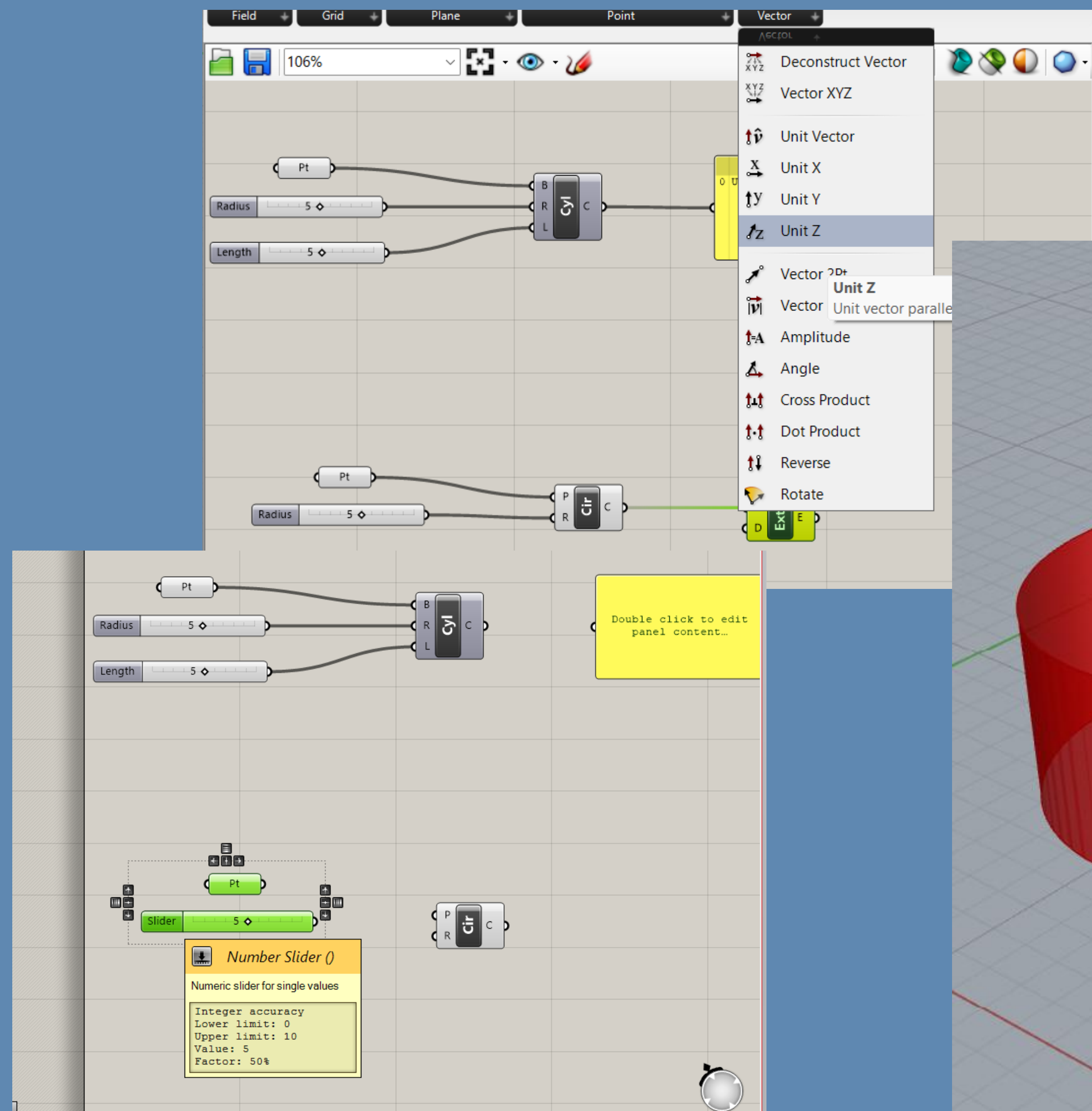
ROTATE 3D

RAILREVOLVE

ABÓBADA DE BOLBO ALVEOLADA



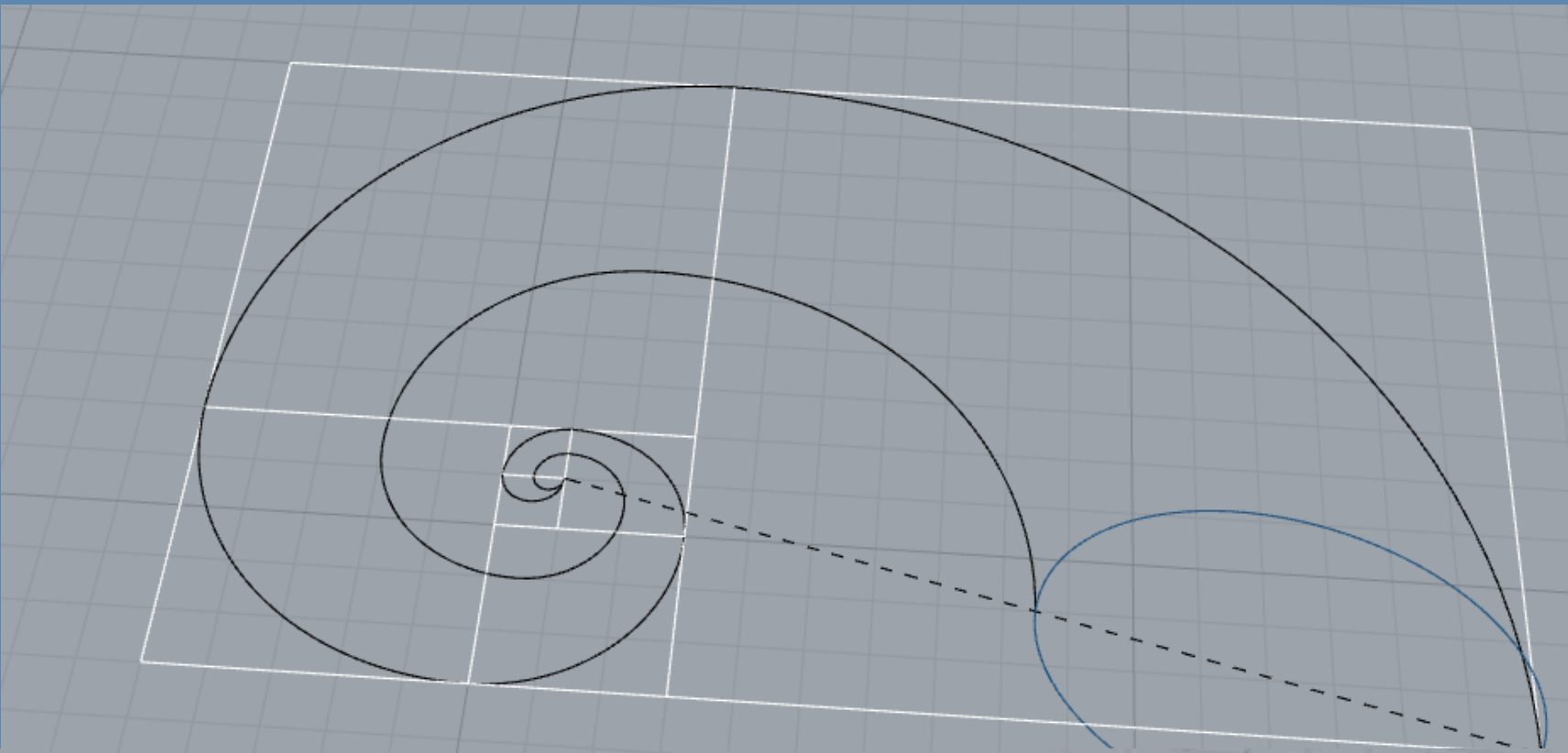
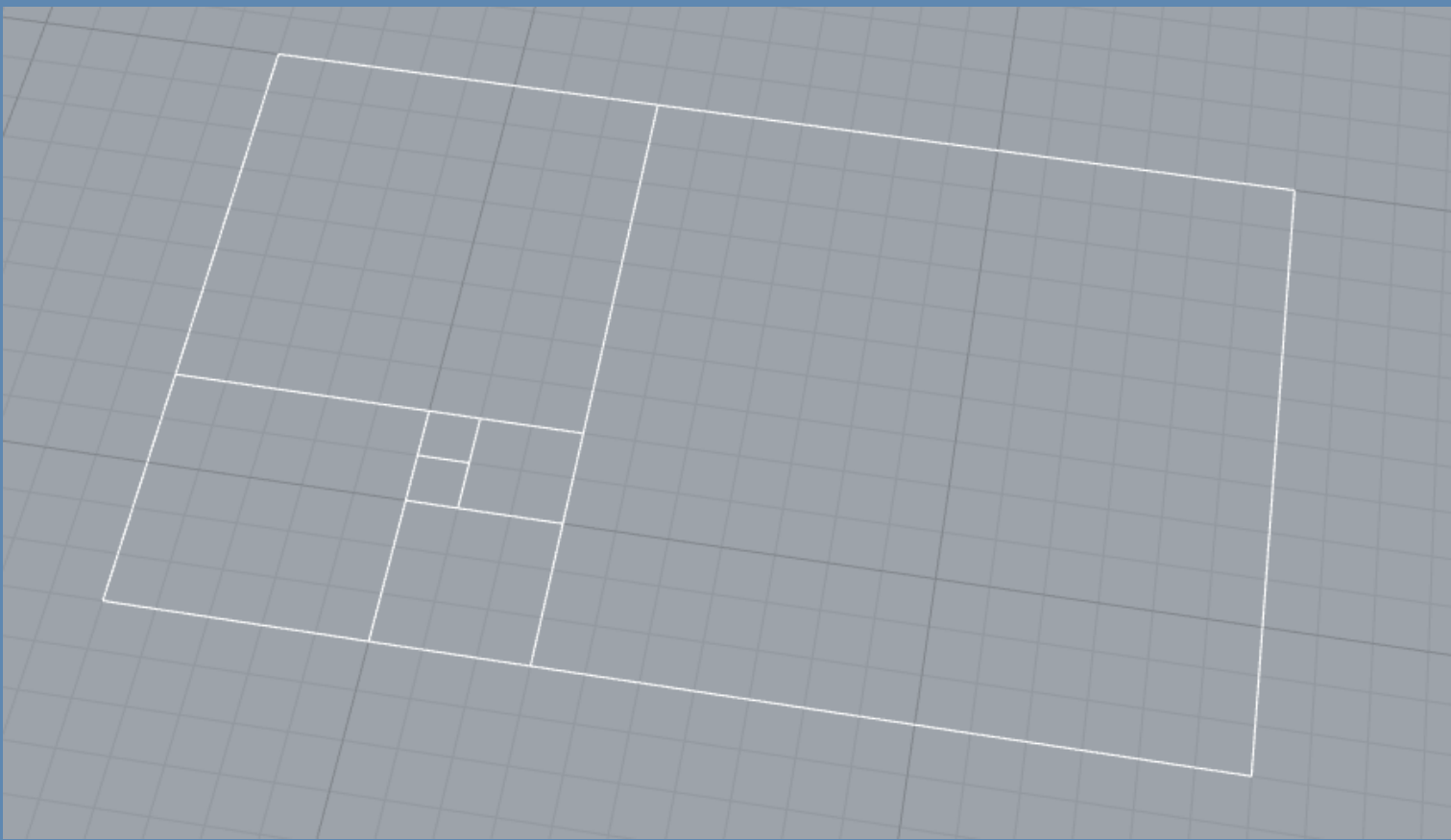
GRASSHOPPER



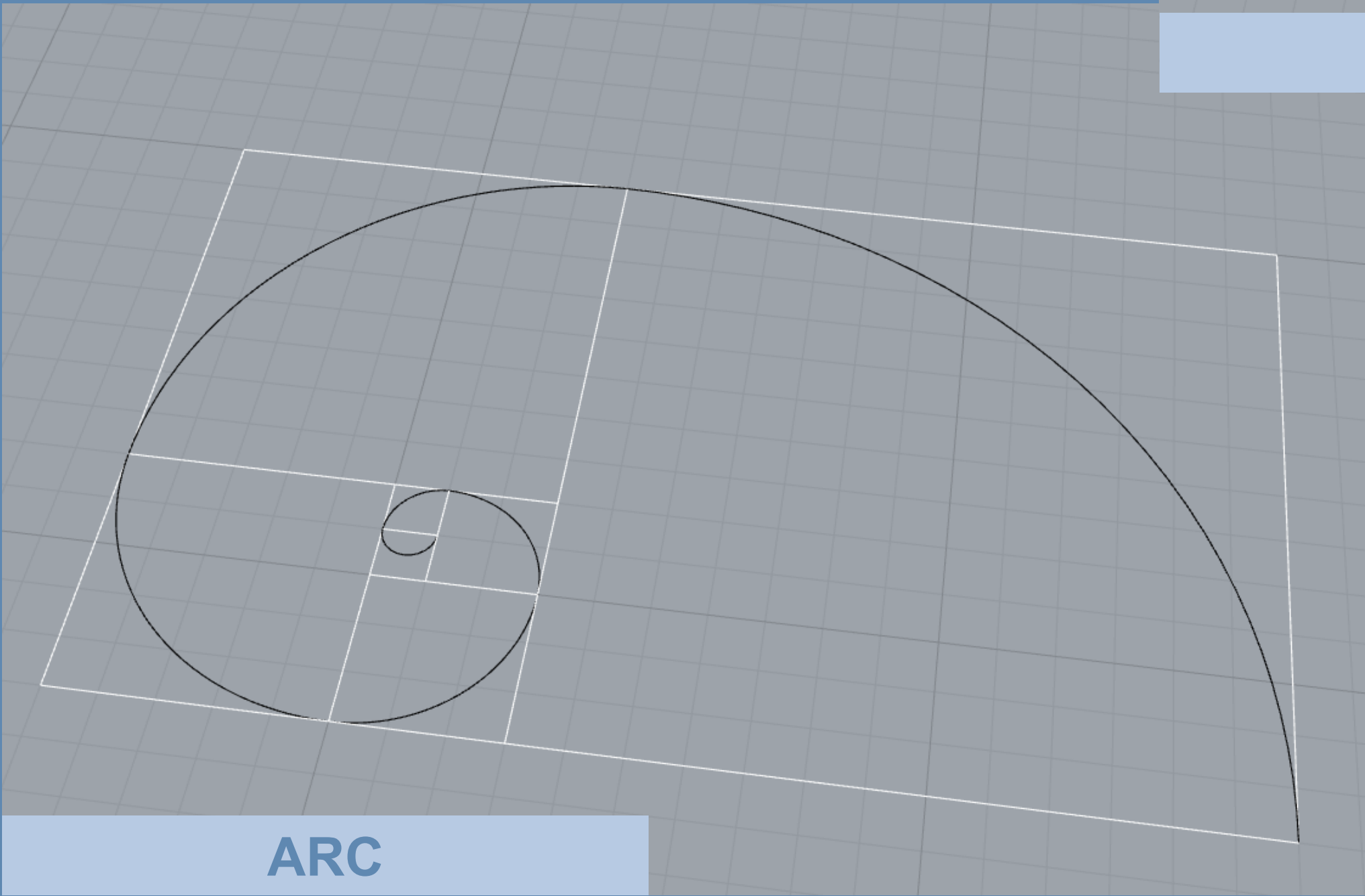
GRASSHOPPER

AULA. 9 – MOLUSCOS E ABÓBADAS NO GRASSOPPER

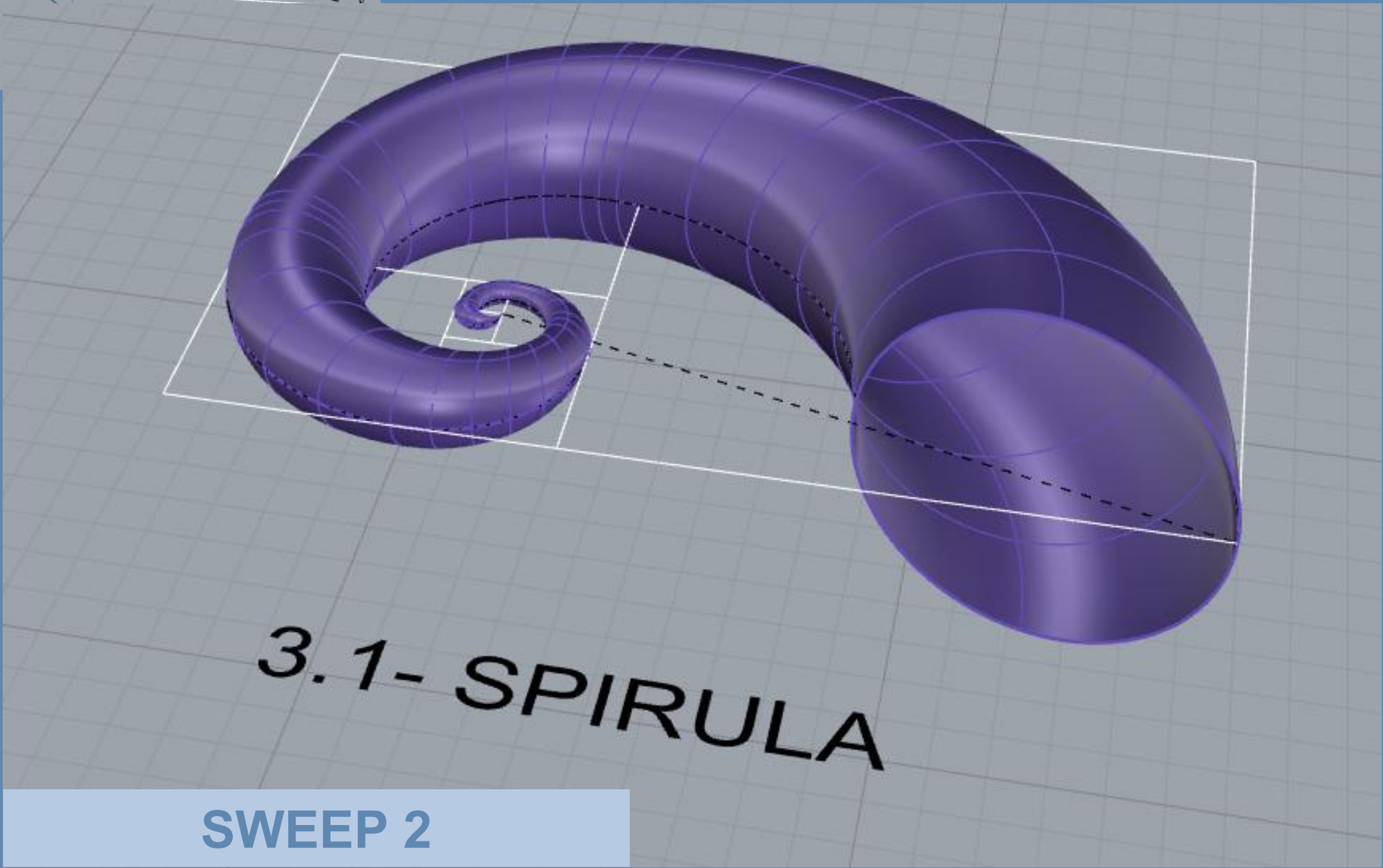
Começámos a fazer um molusco a partir da regra de **FIBONACCI**



SCALE

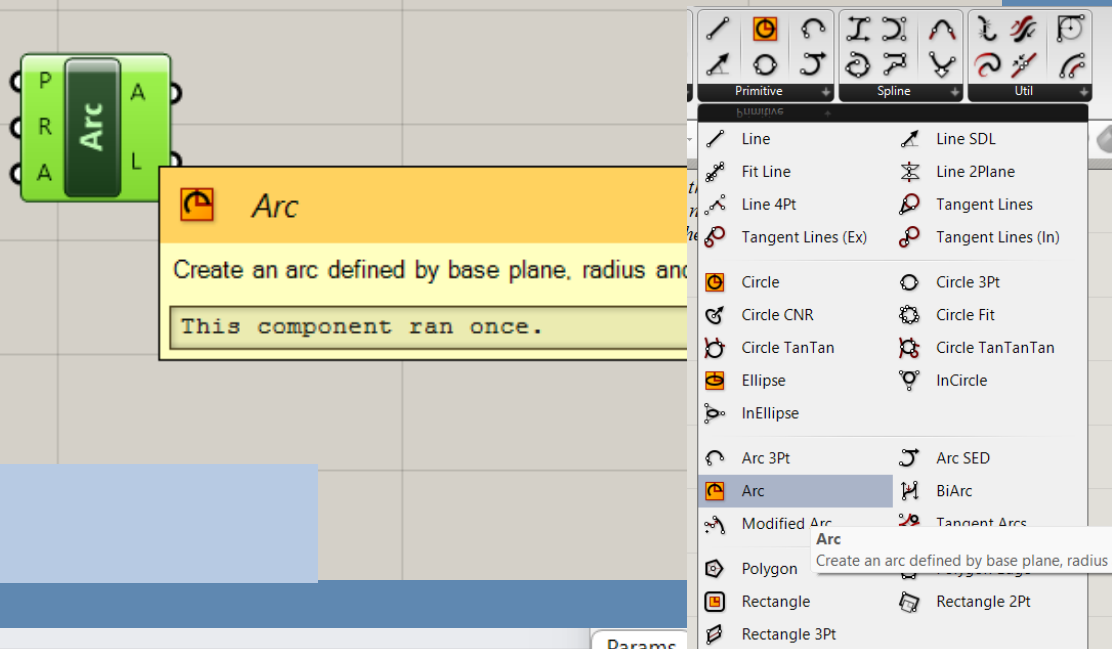
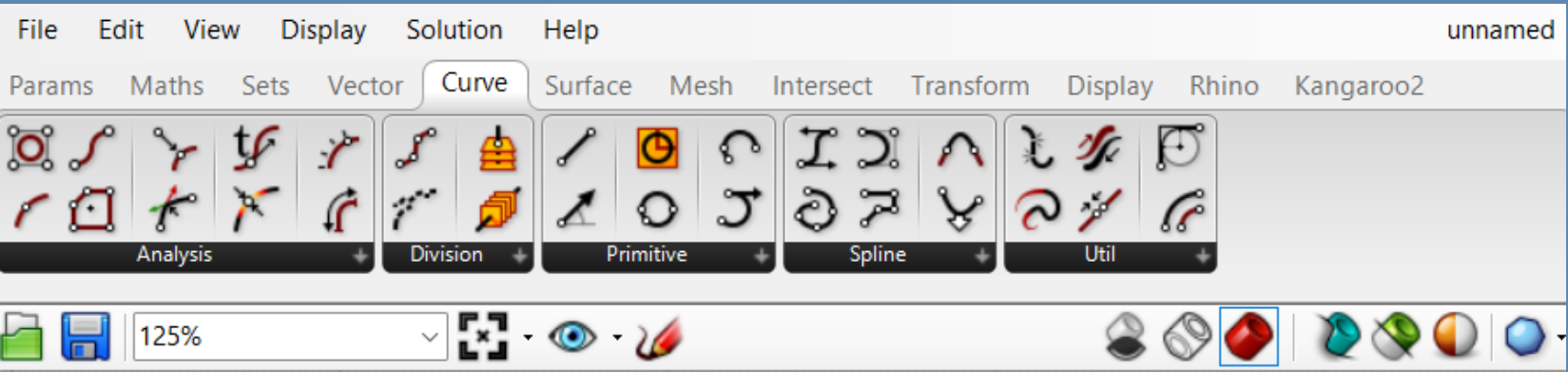


ARC

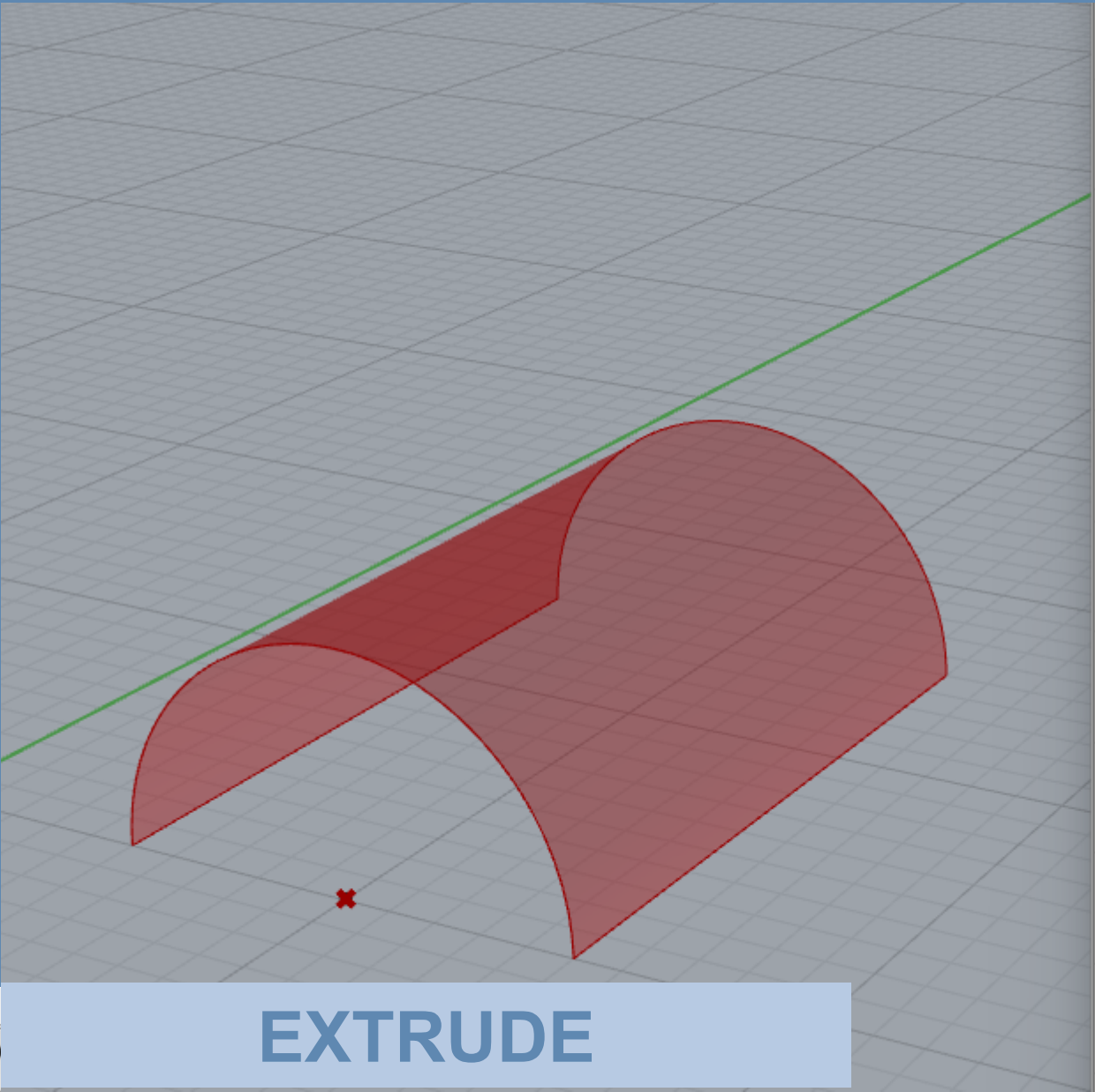


SWEEP 2

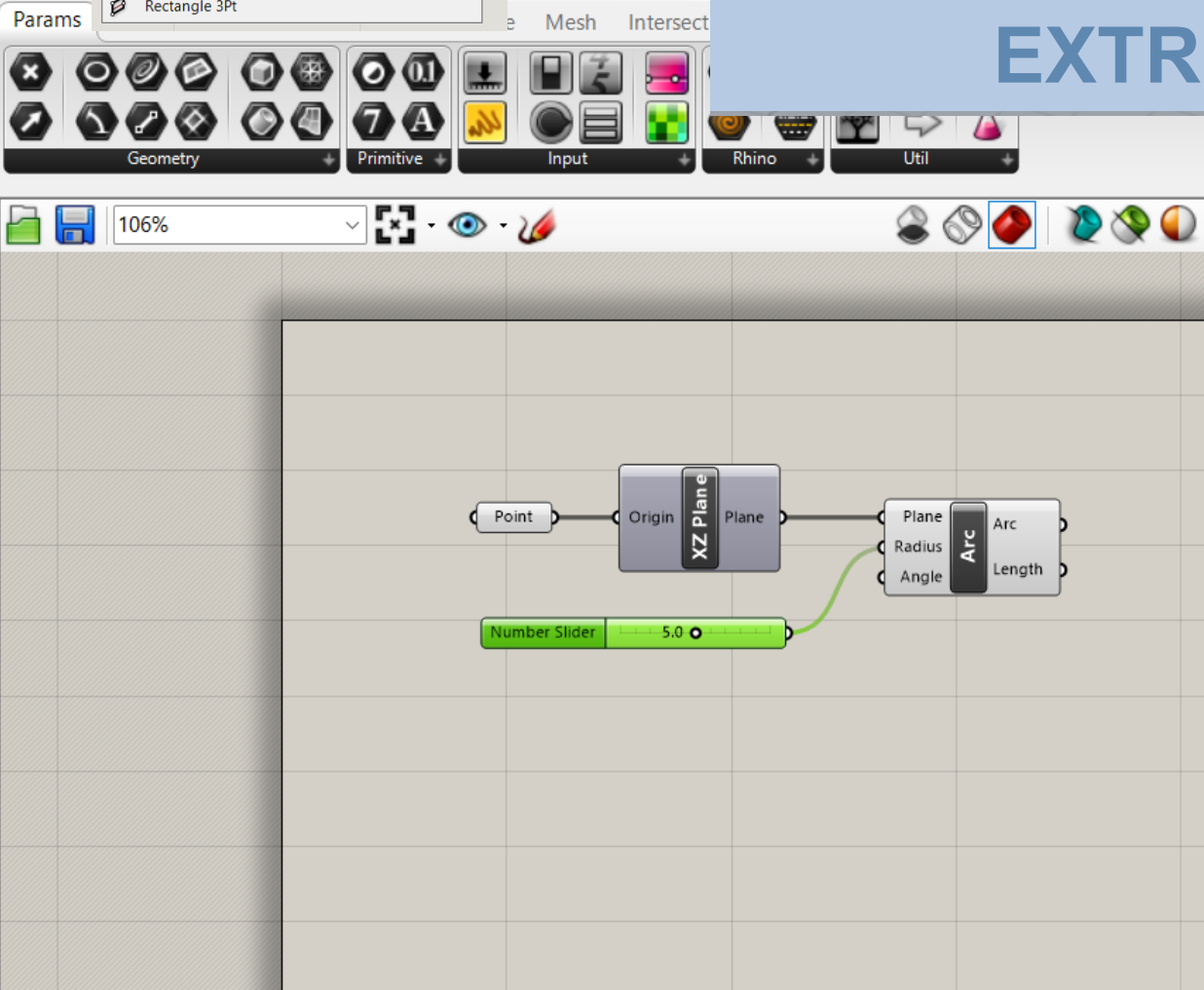
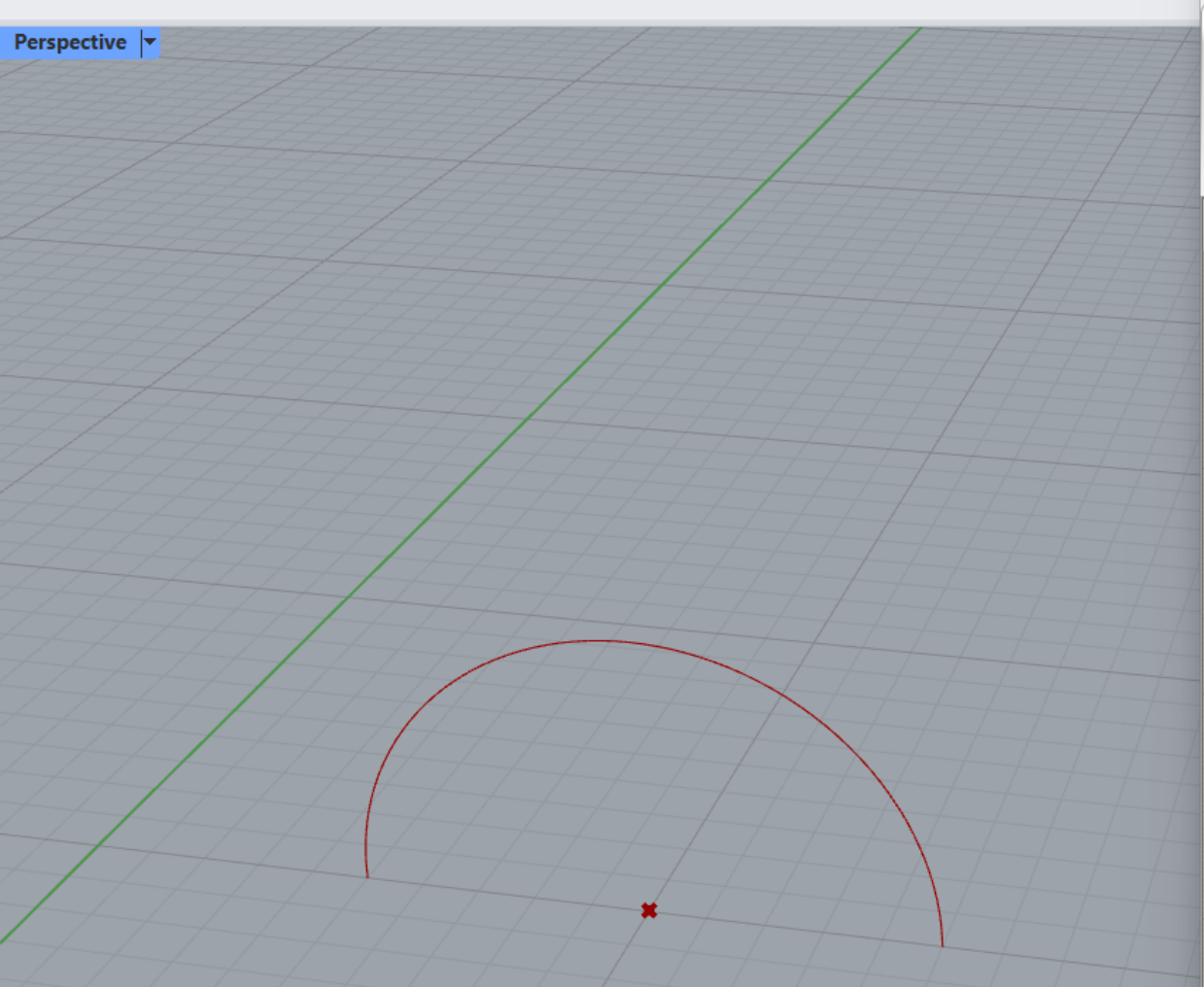
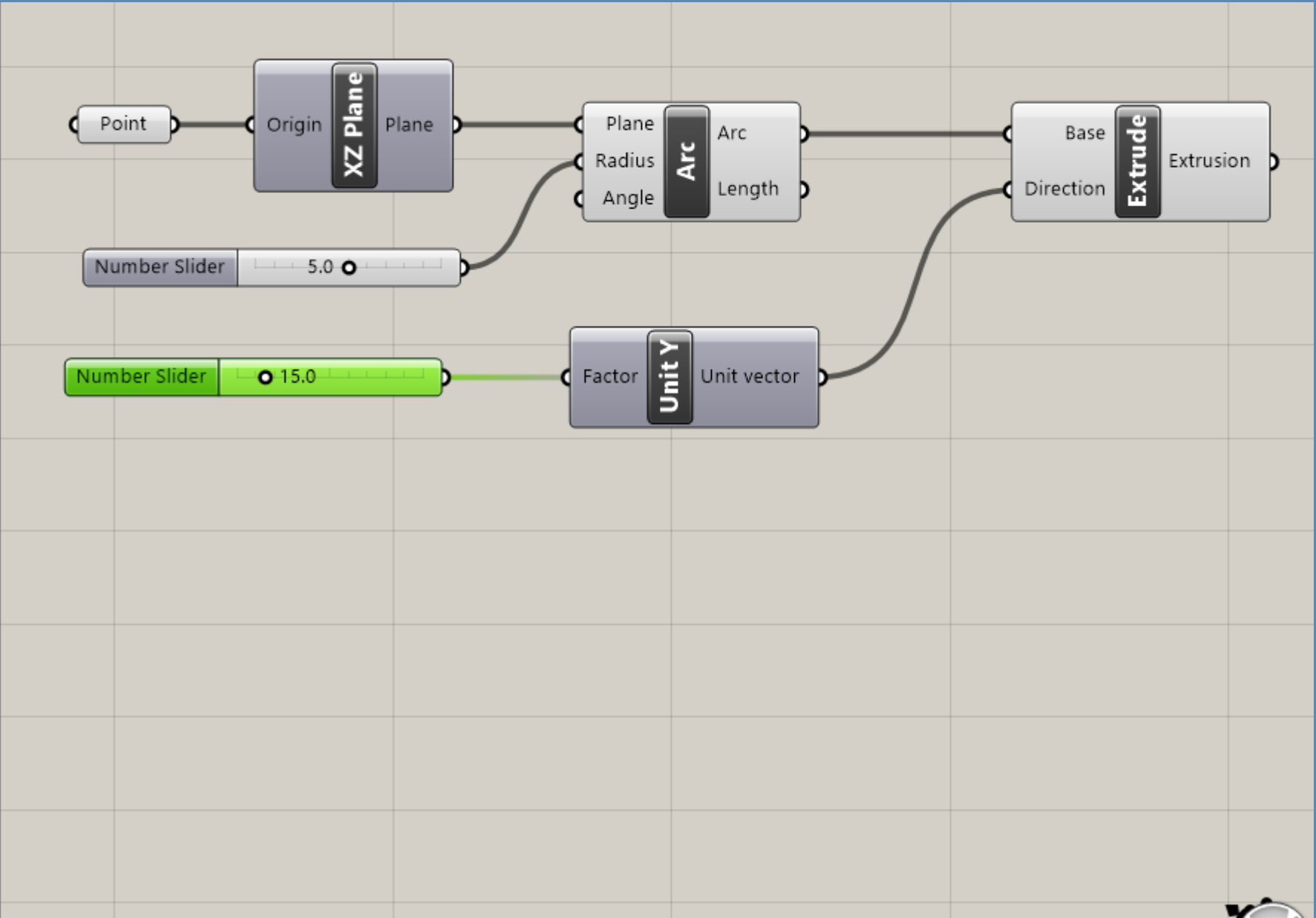
SPIRULA



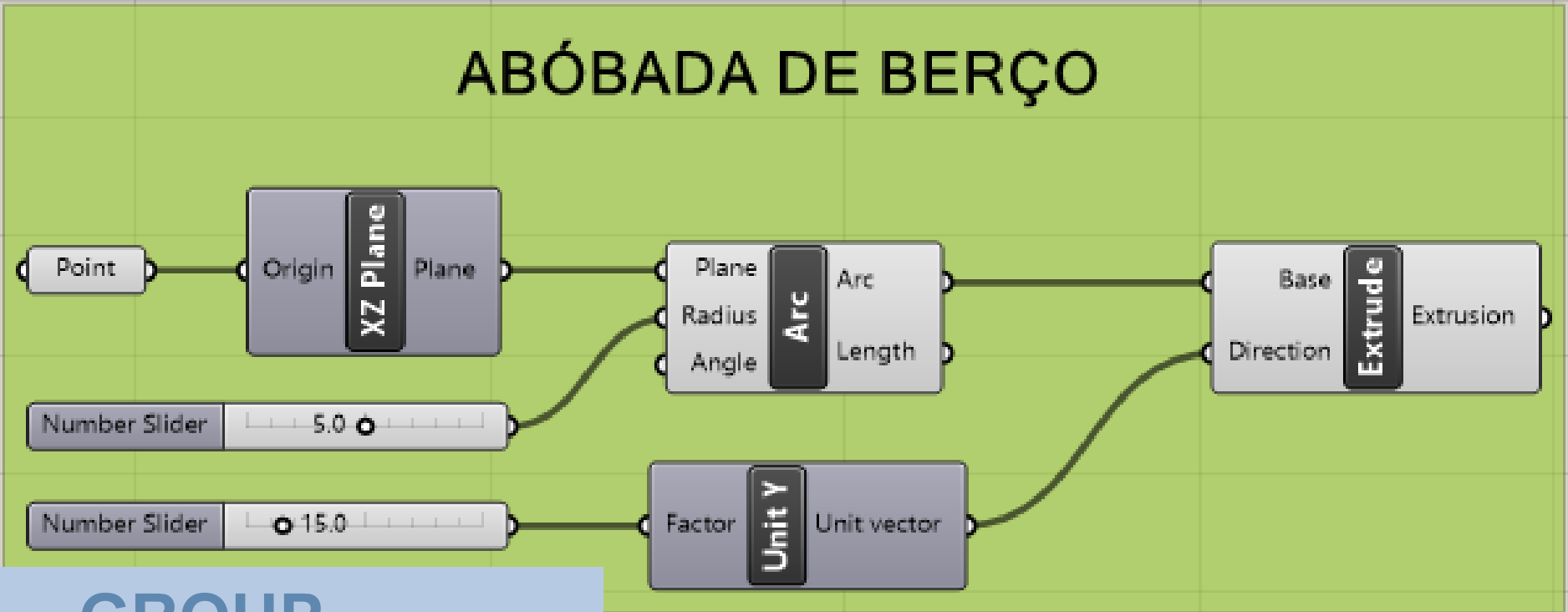
ARC



EXTRUDE

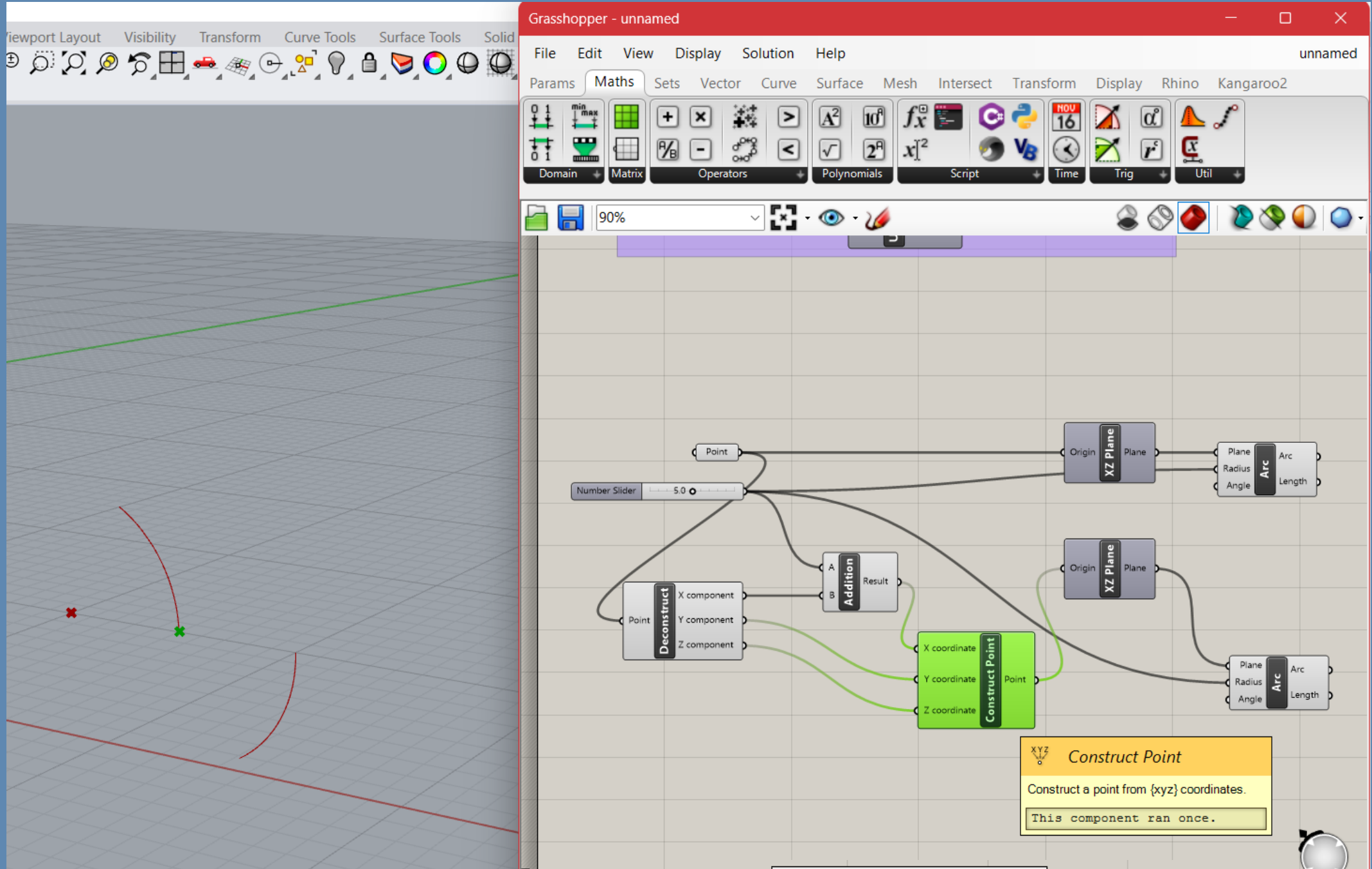
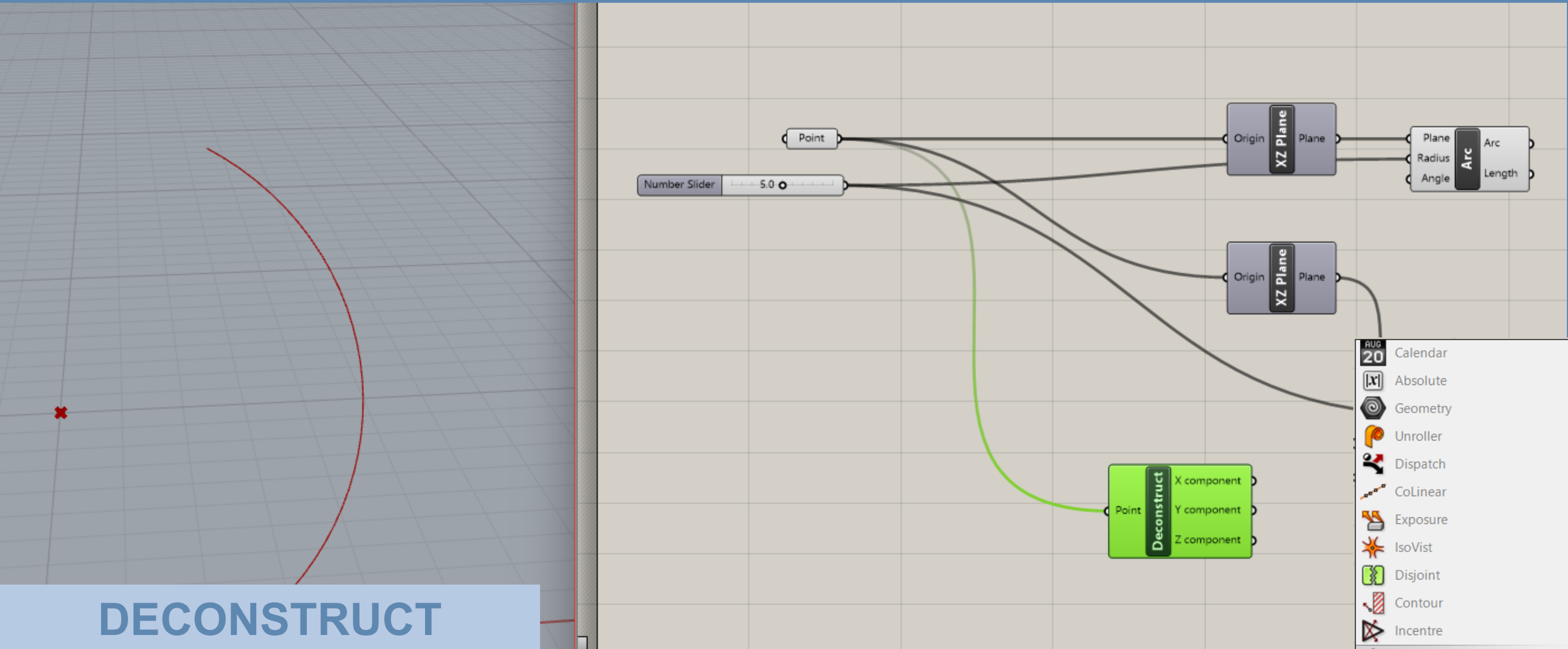
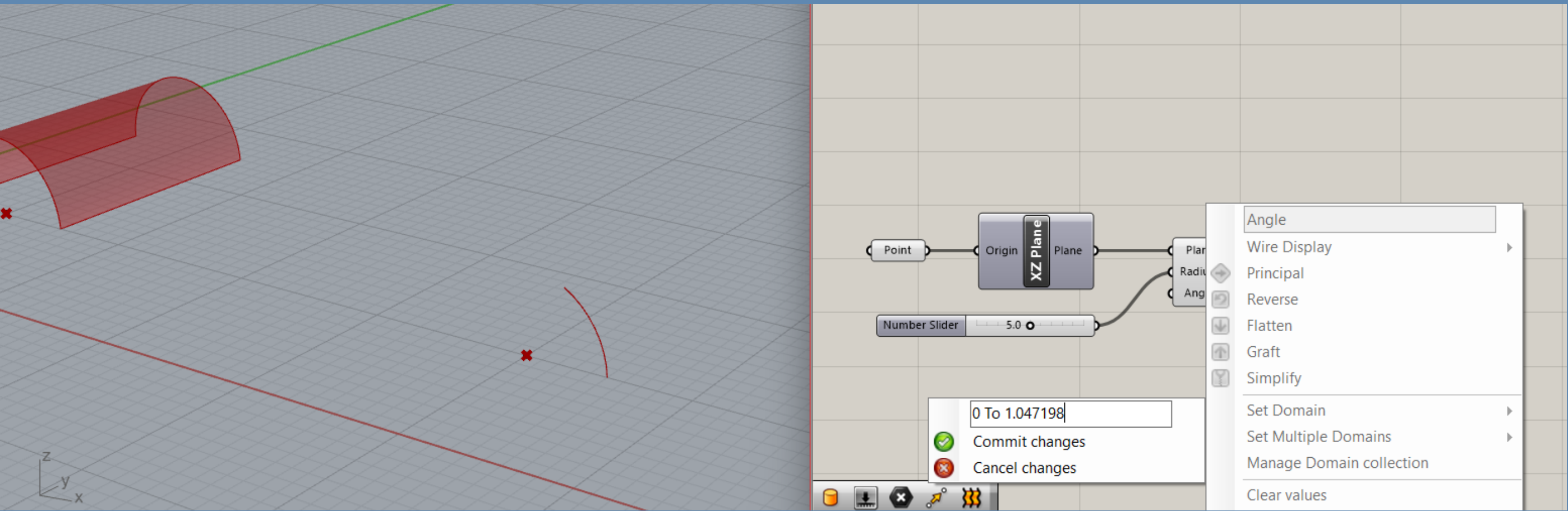


GROUP



ABÓBADA DE BERÇO

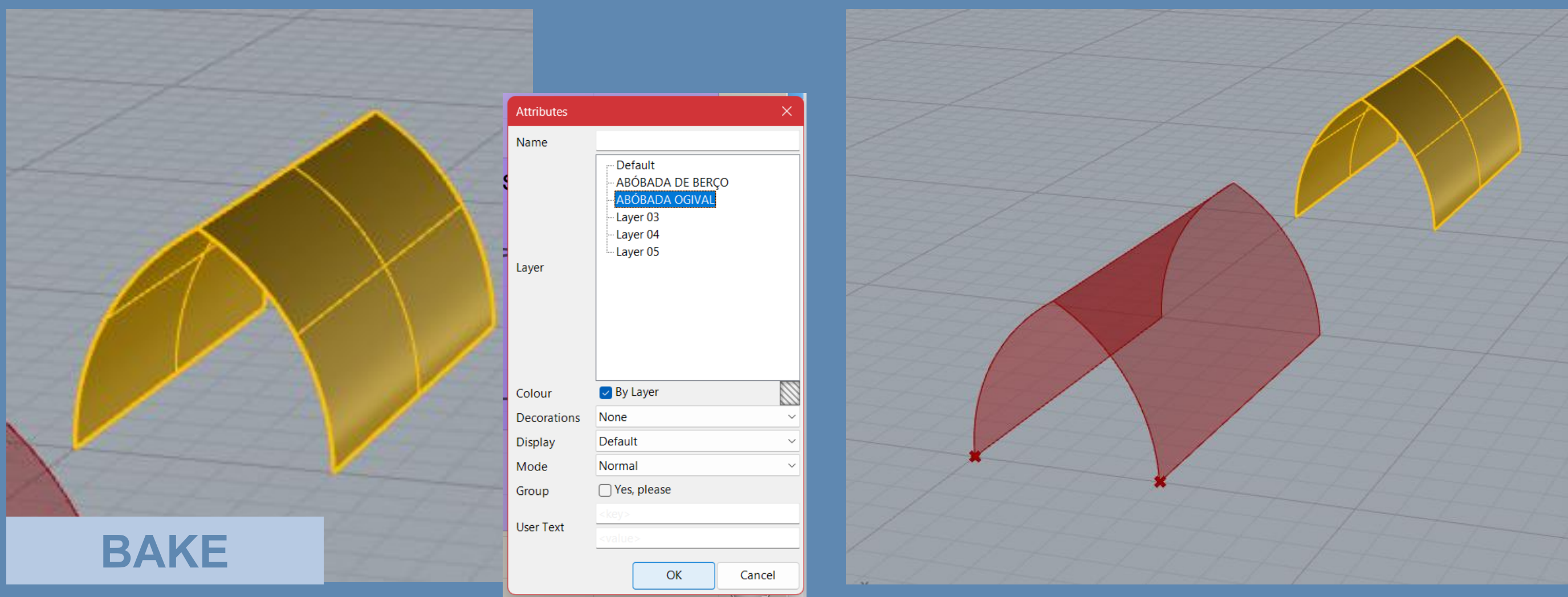
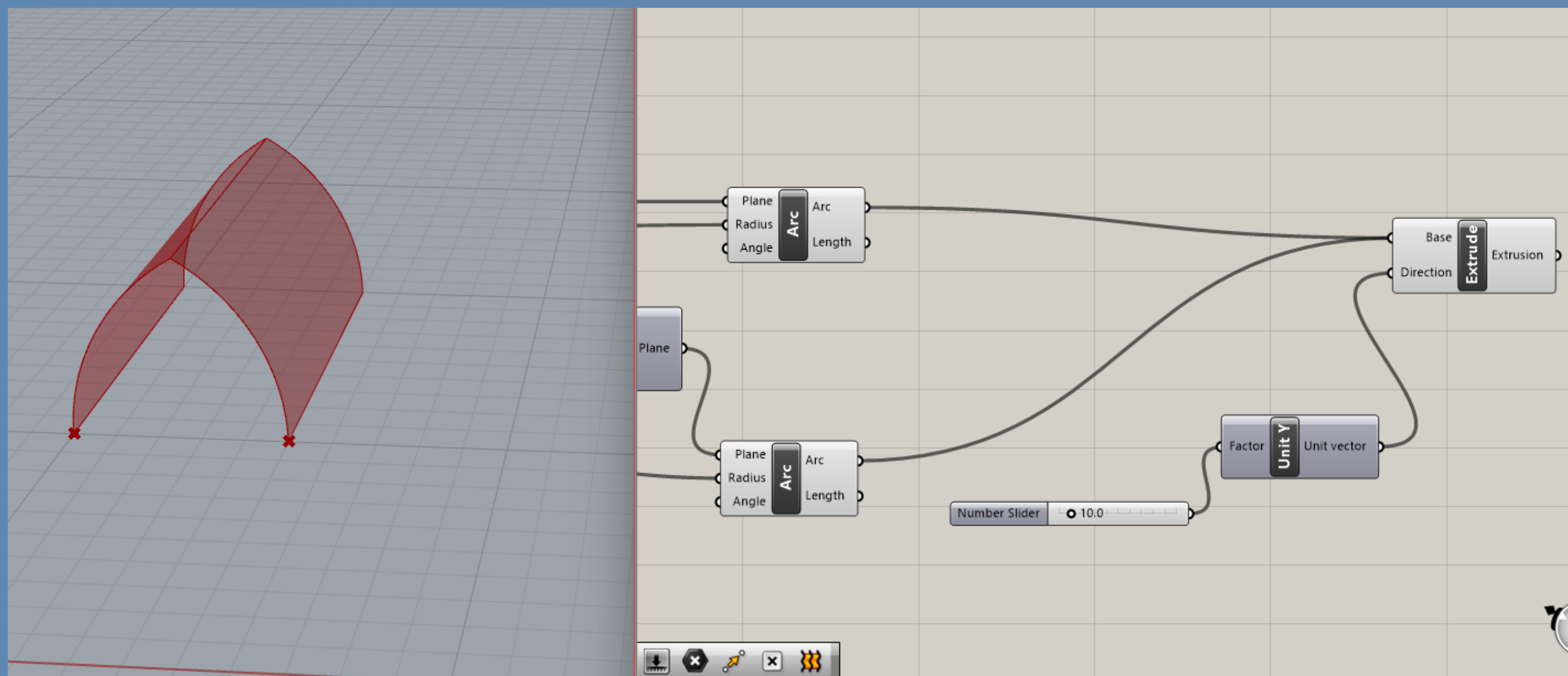
Fizemos 2 abóbadas no GRASSOPPER



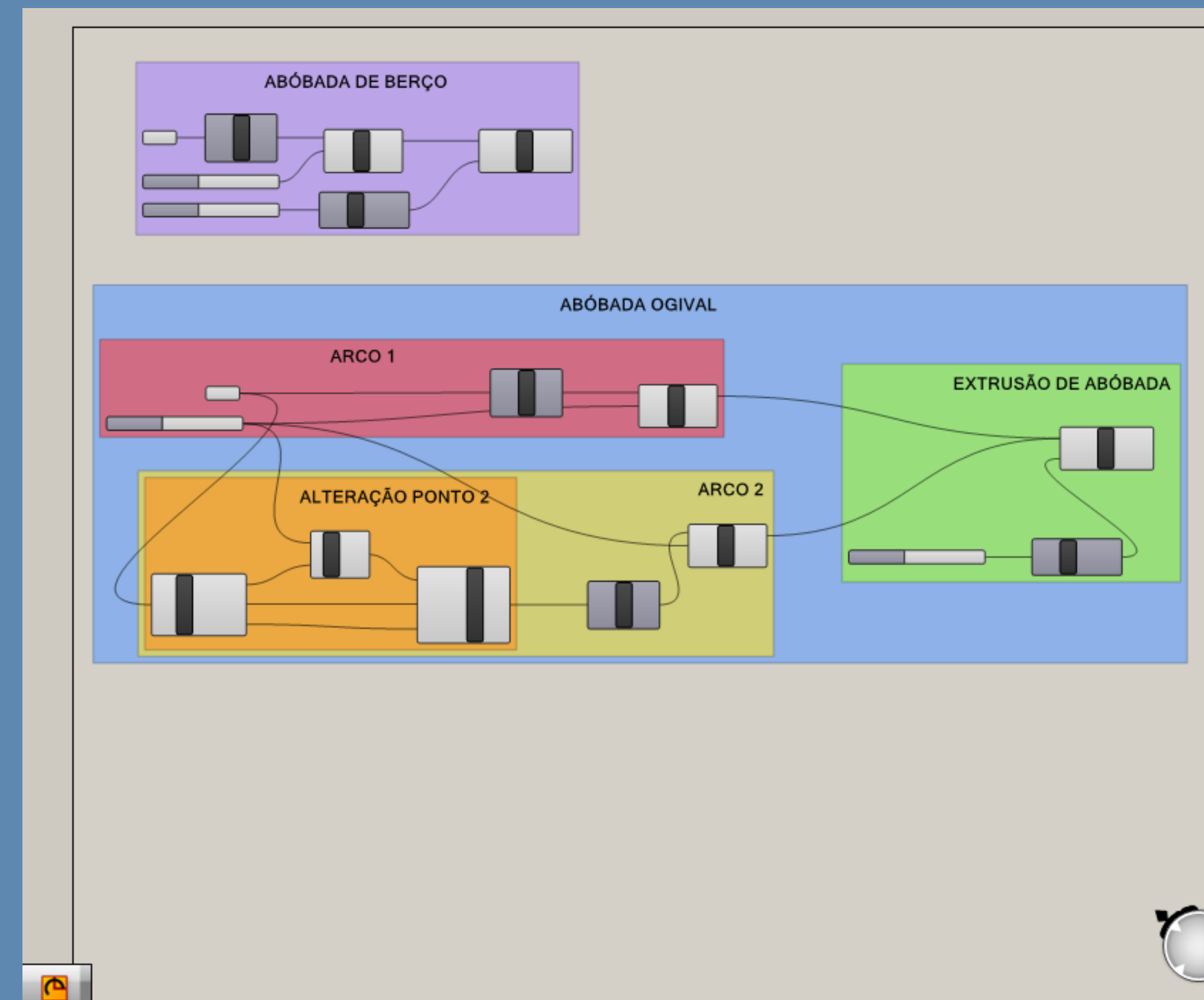
CONSTRUCT POINT

ABÓBADA OGIVAL

Fizemos 2 abóbadas no GRASSOPPER



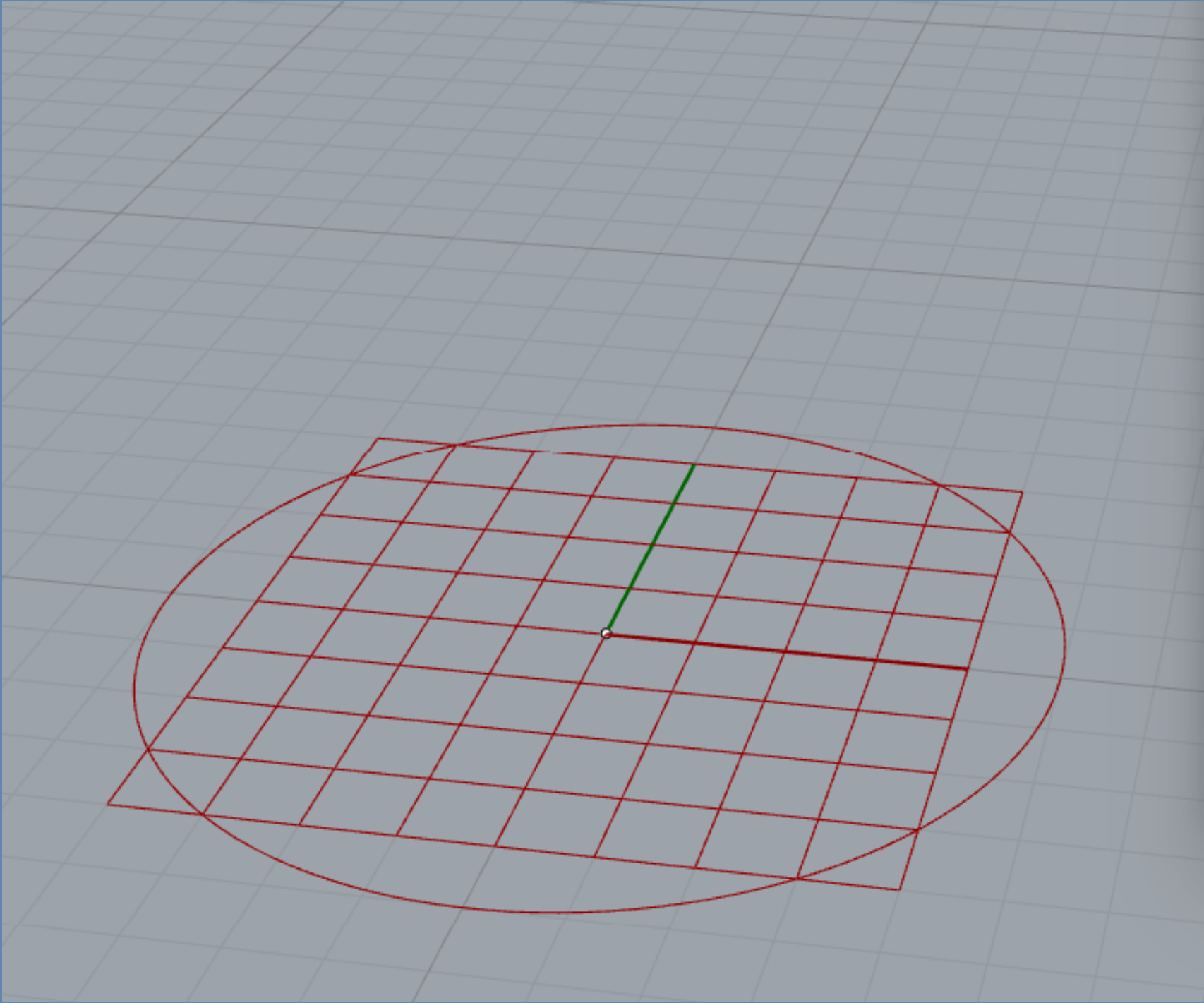
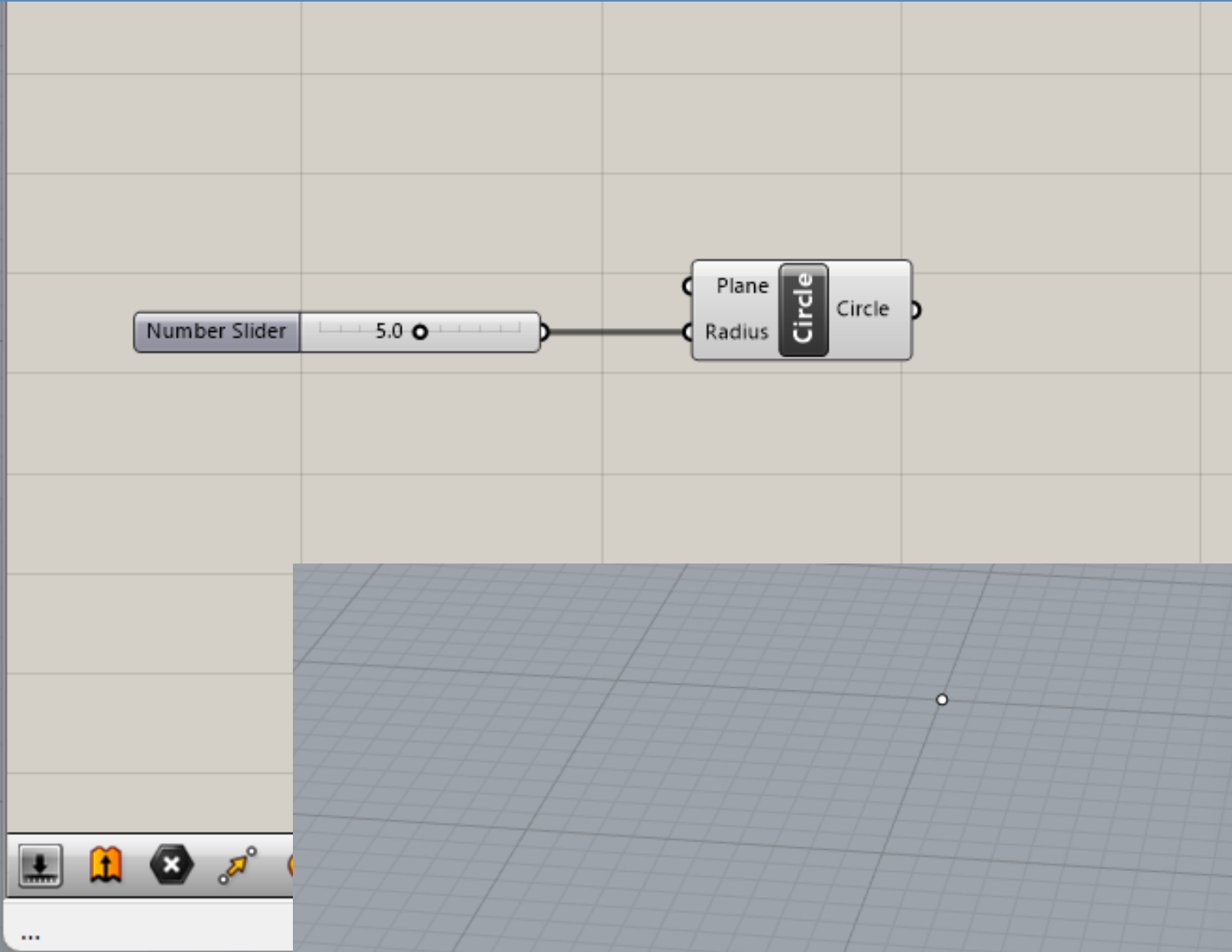
BAKE

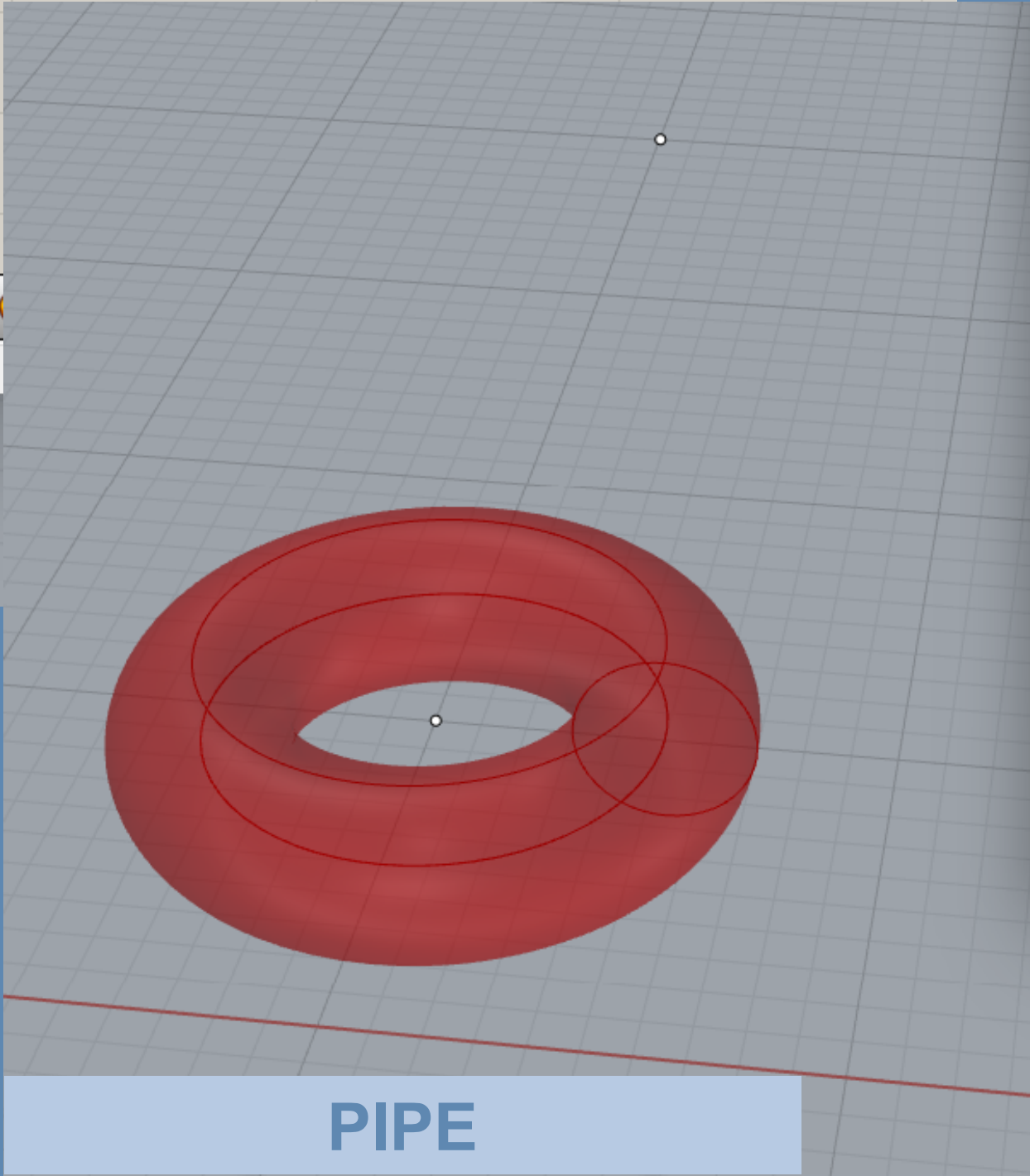


ABÓBADA OGIVAL

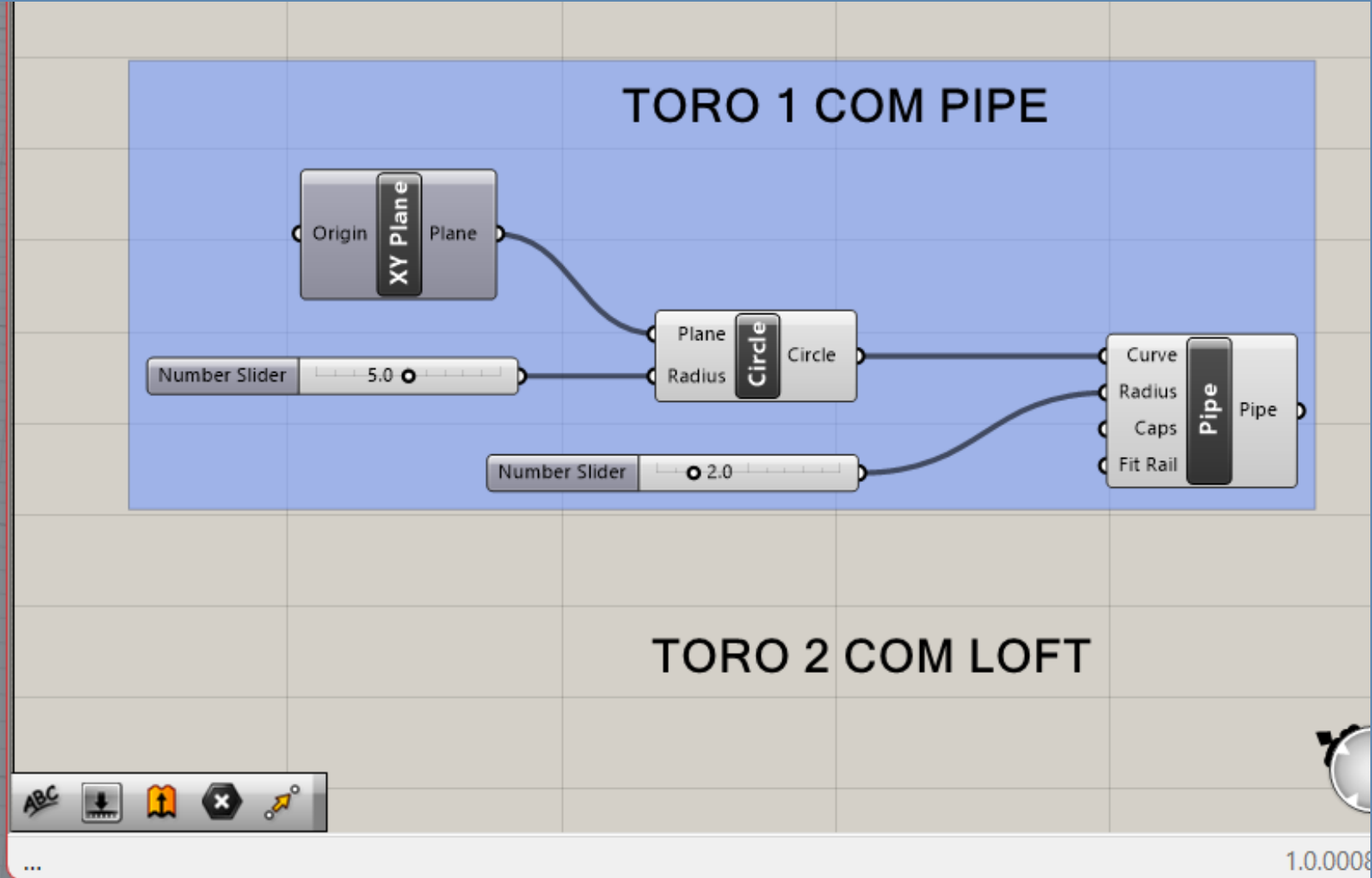
AULA. 10 – TORUS NO GRASSOPPER

Aprendemos a fazer a forma **TORUS** de duas formas, com o comando **PIPE** e outro com **LOFT**



PIPE

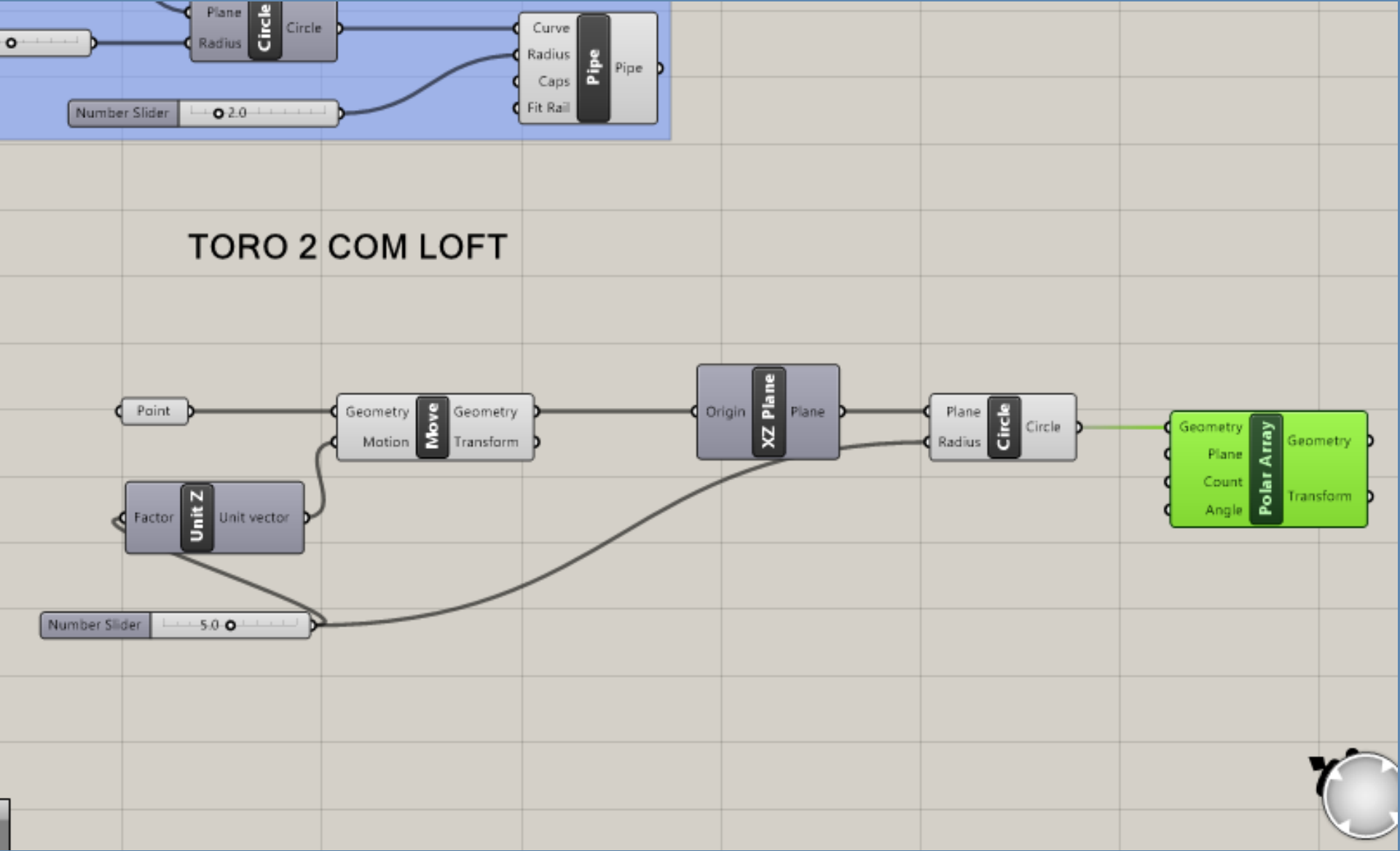
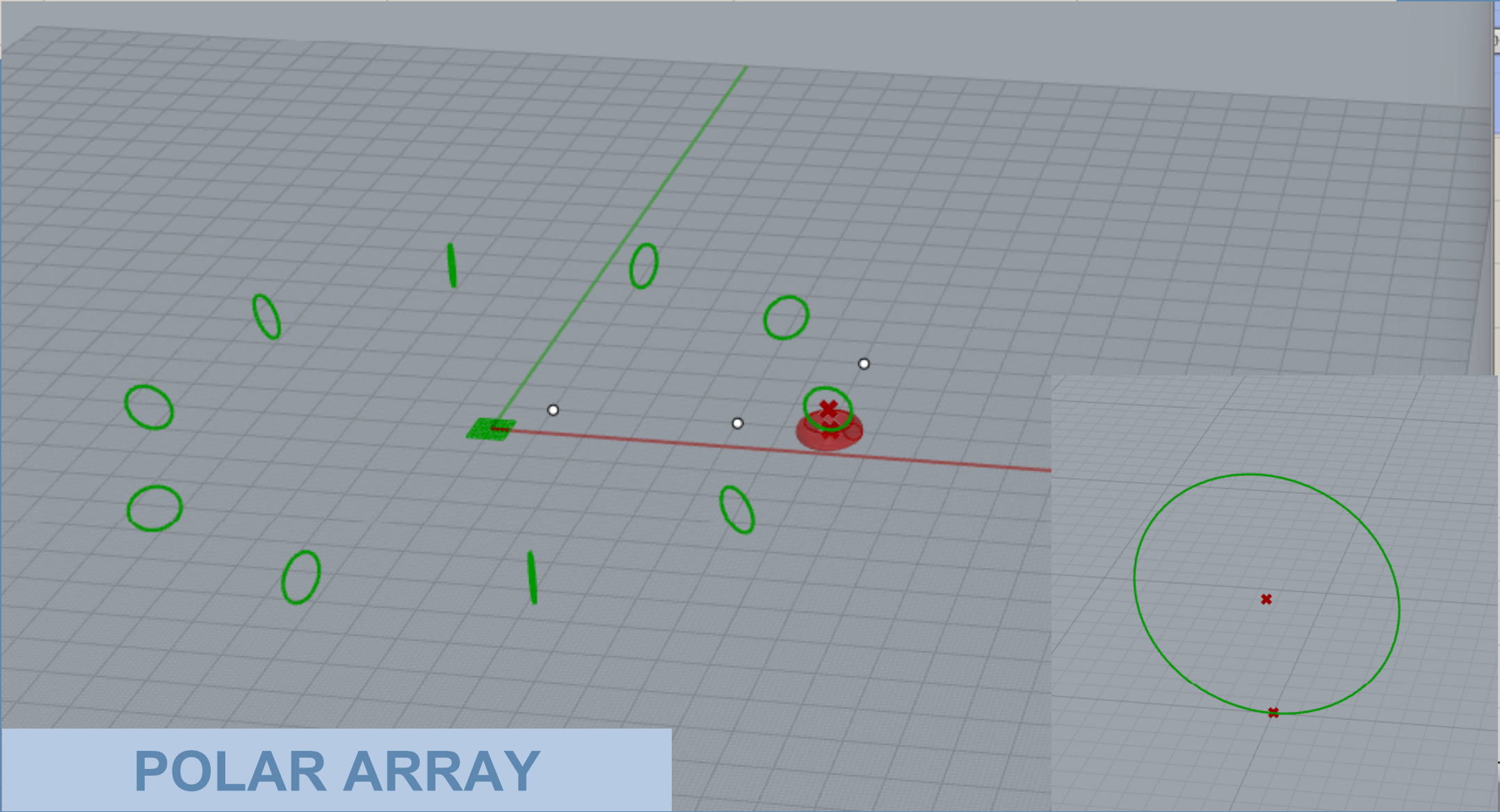
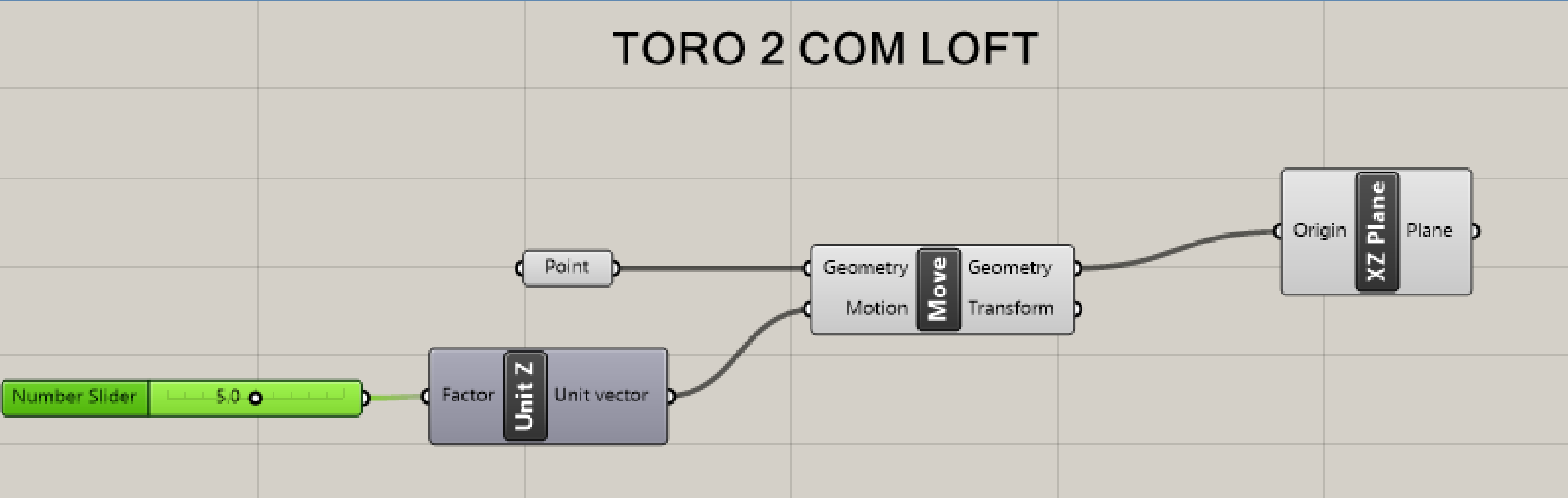


TORO 1 COM PIPE

TORO 2 COM LOFT

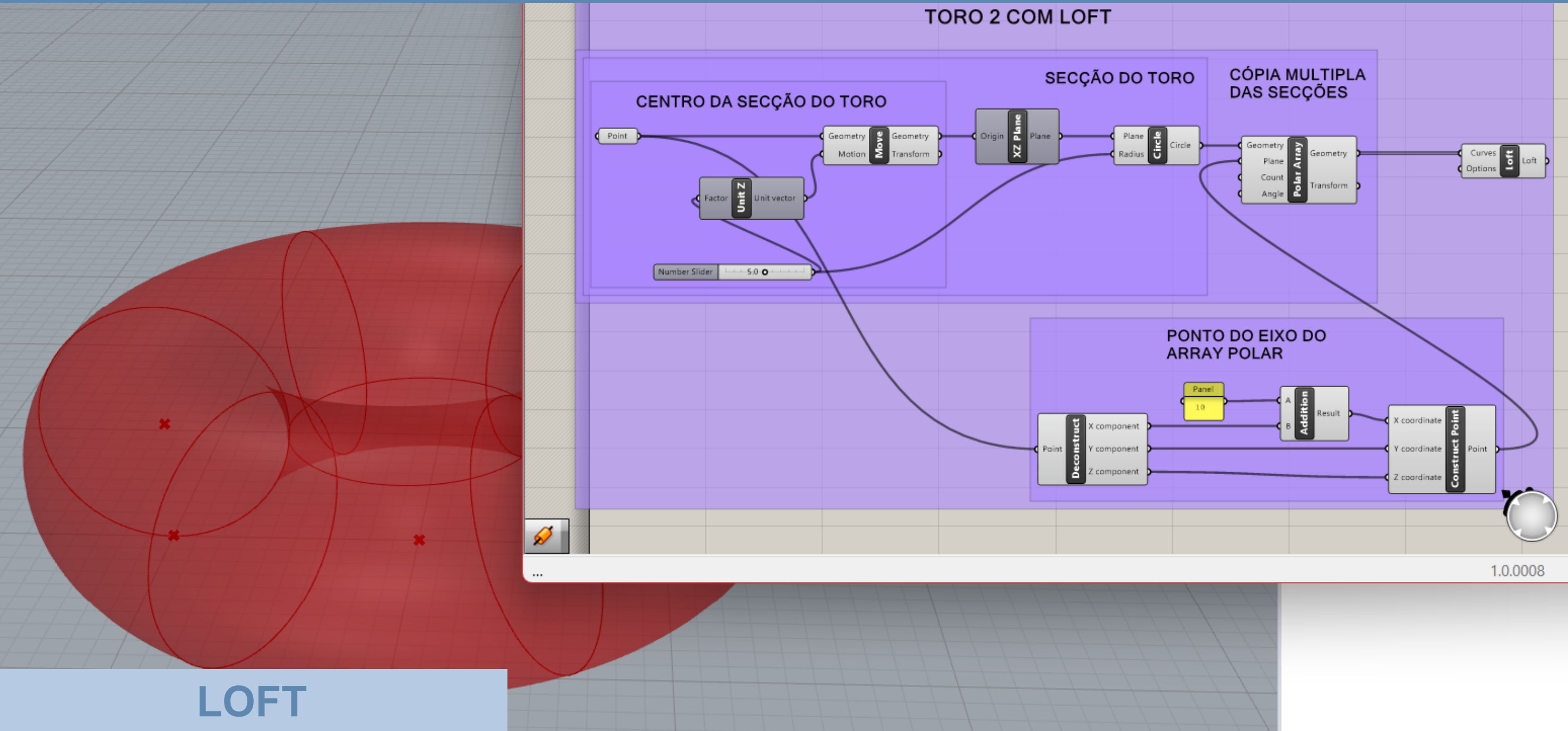
TORUS

Aprendemos a fazer a forma **TORUS** de duas formas, com o comando **PIPE** e outro com **LOFT**

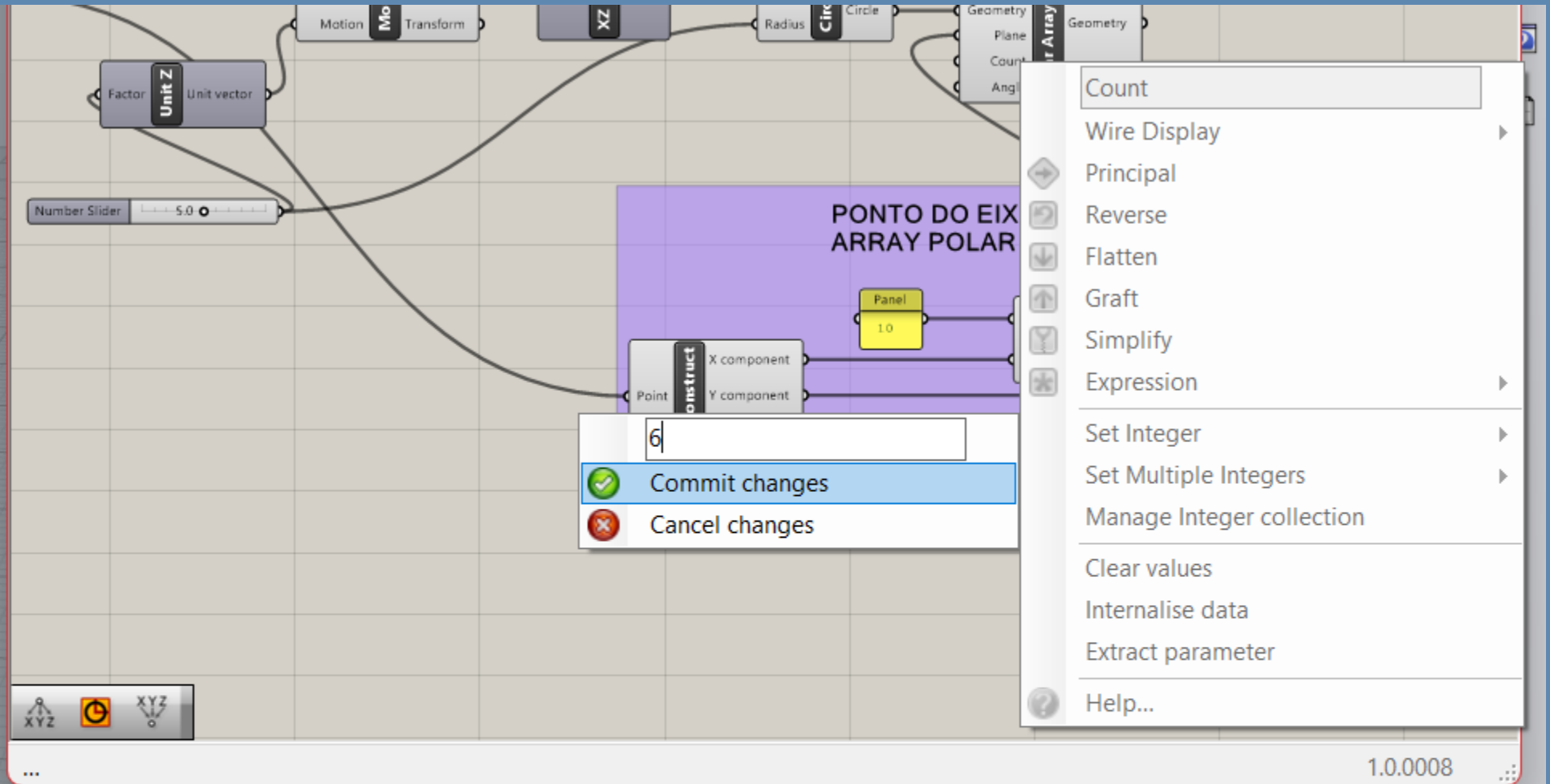


TORUS

Aprendemos a fazer a forma **TORUS** de duas formas, com o comando **PIPE** e outro com **LOFT**

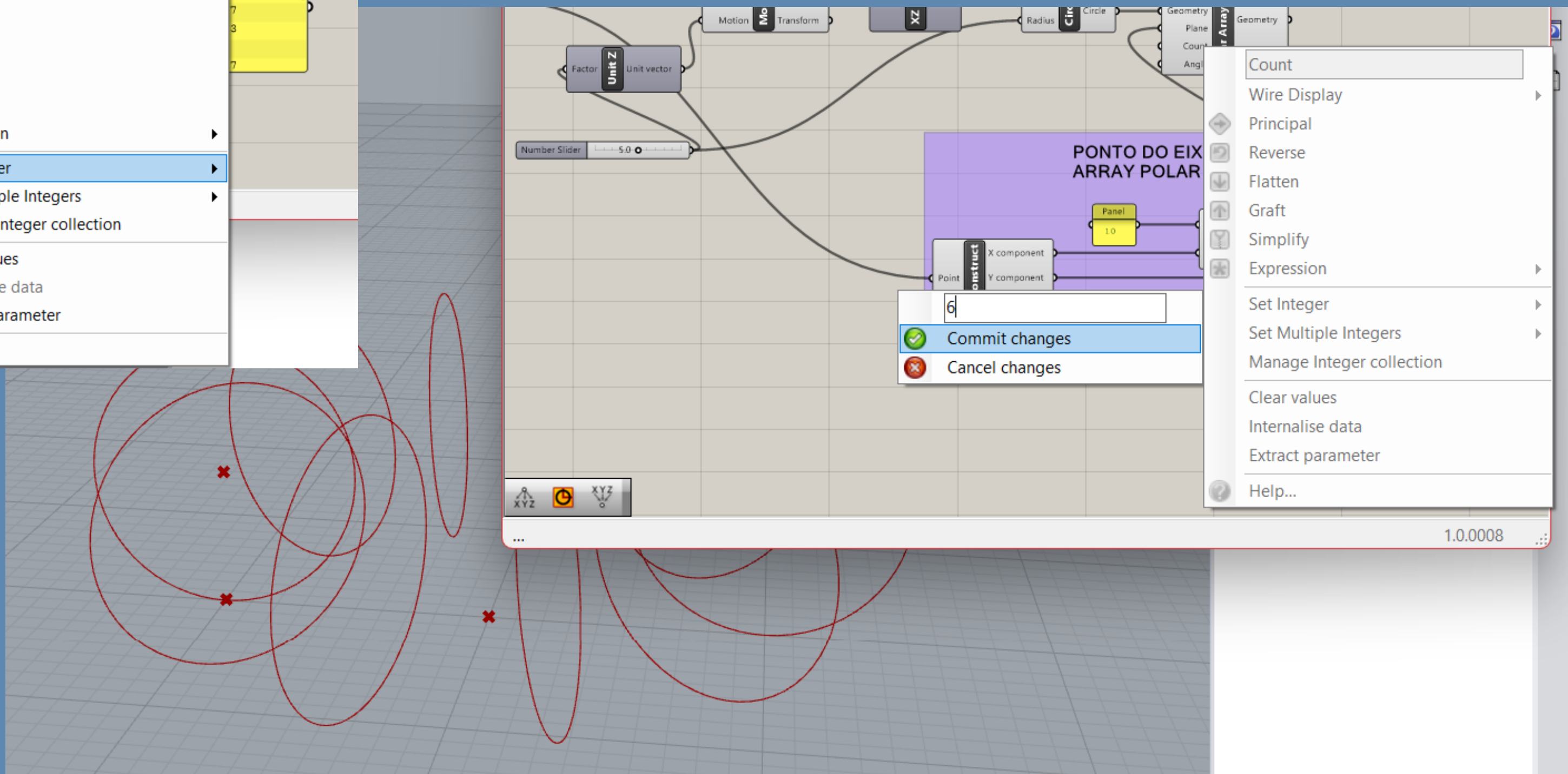
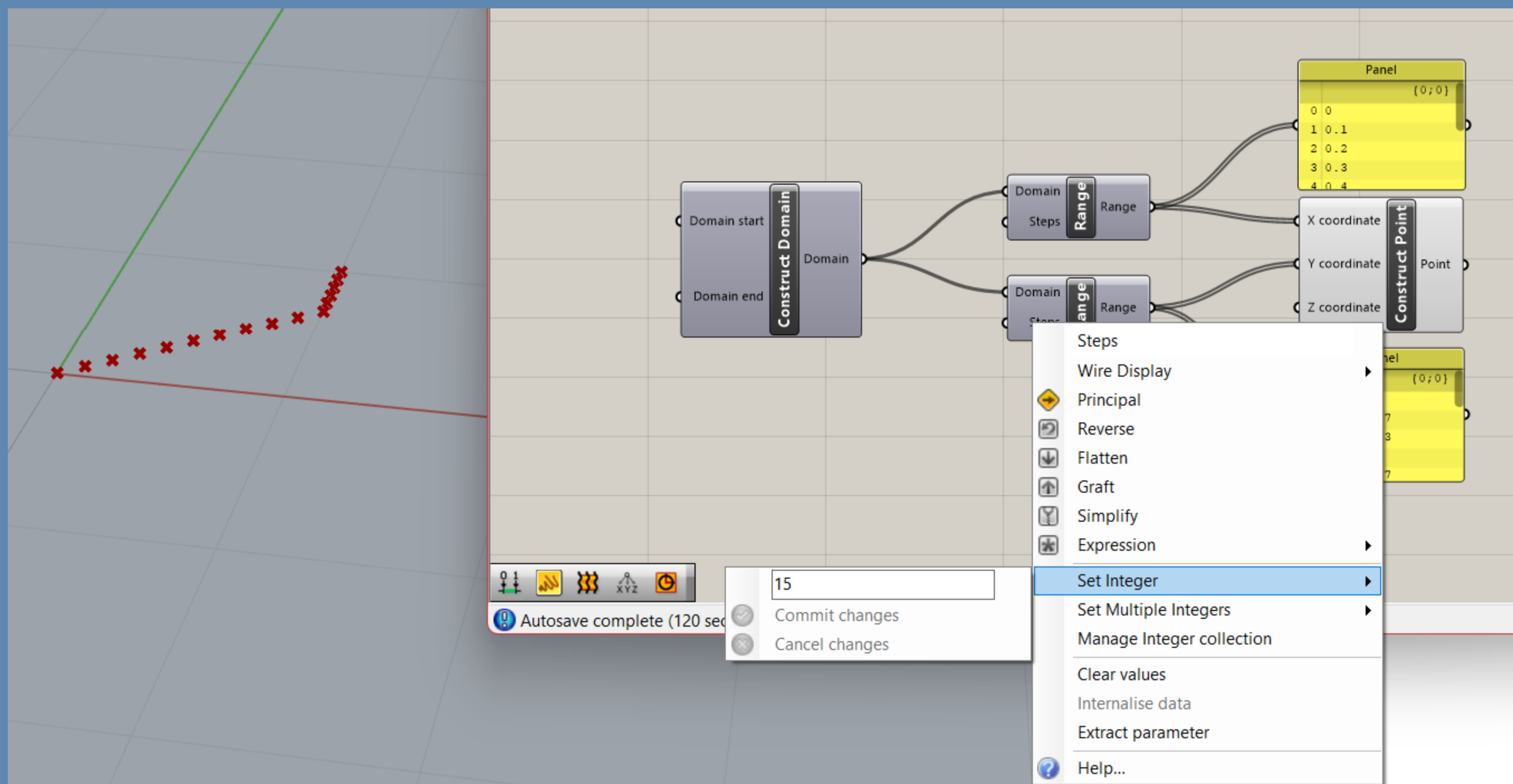


LOFT



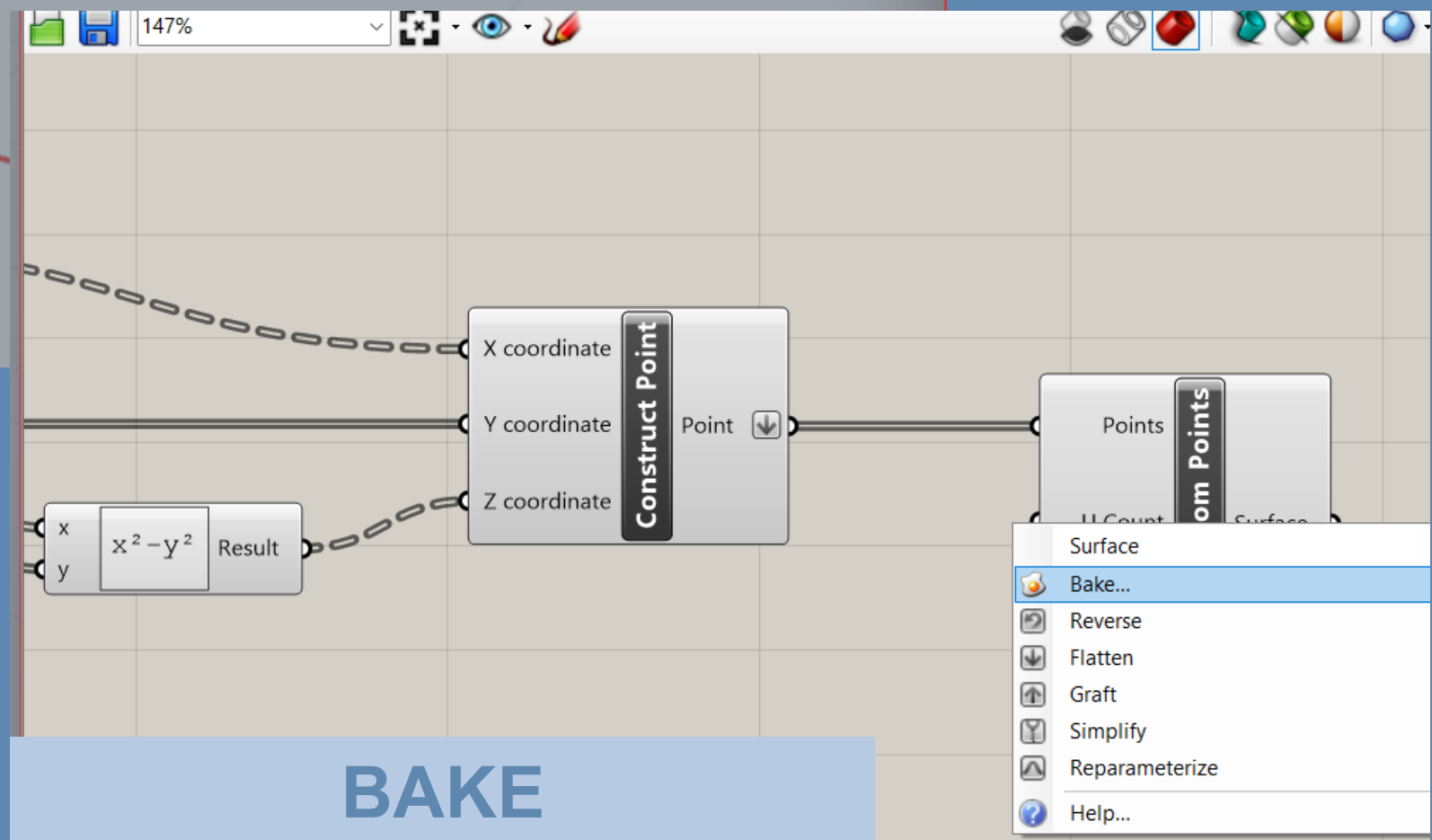
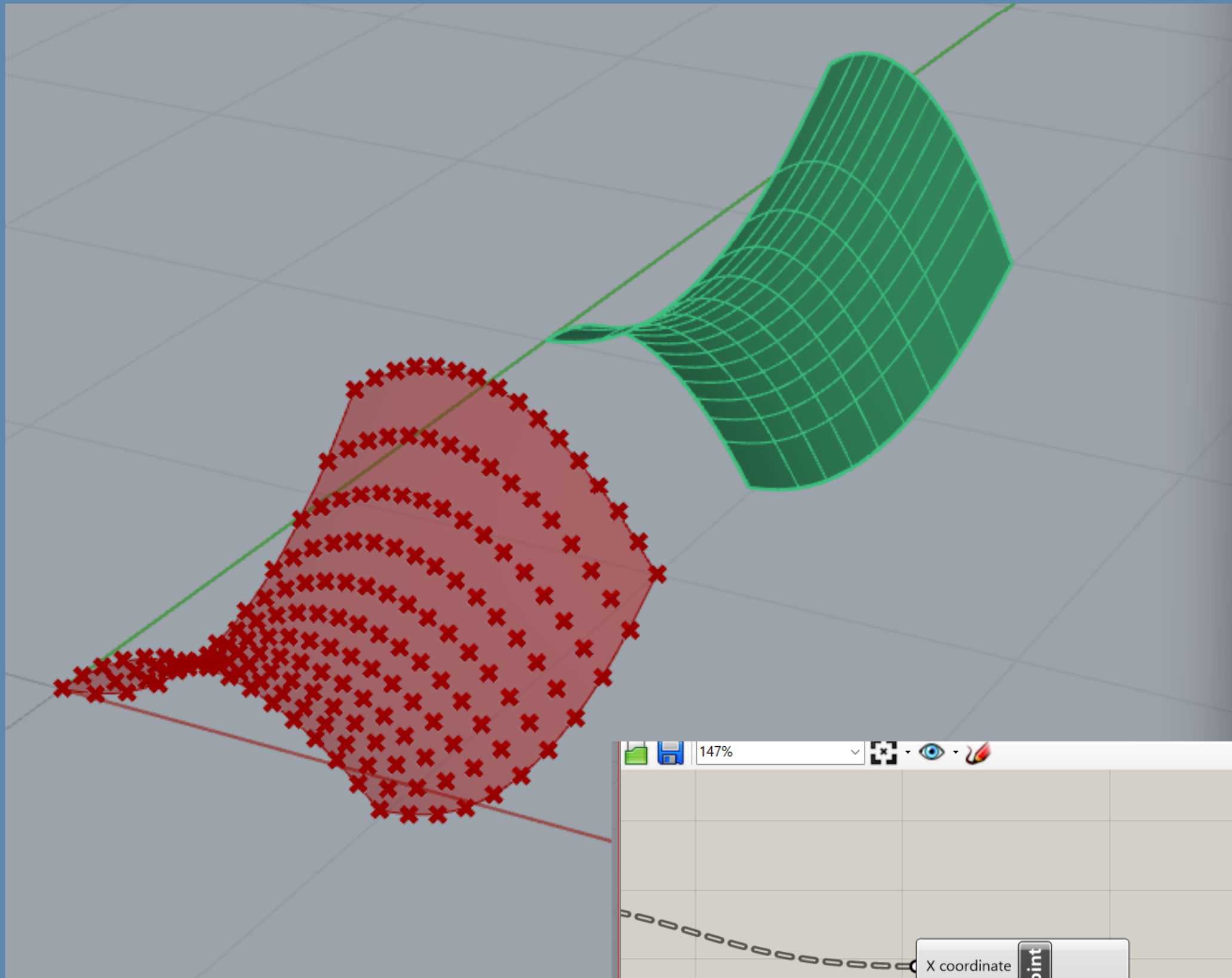
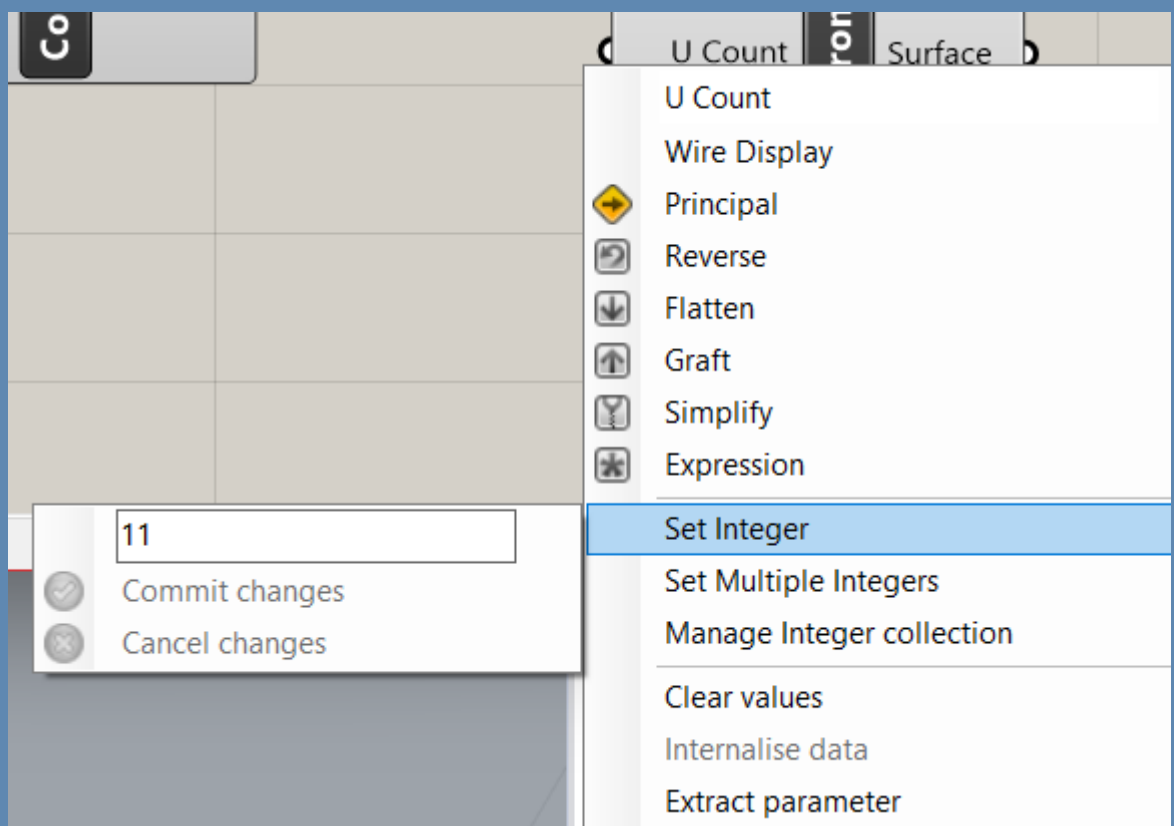
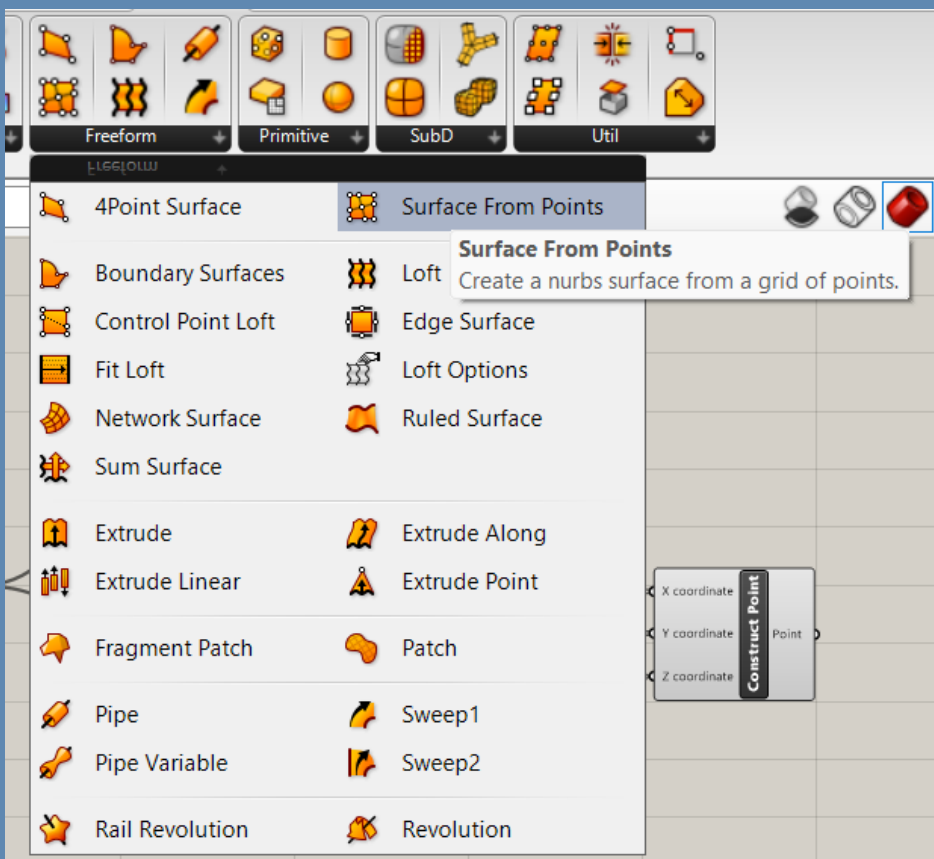
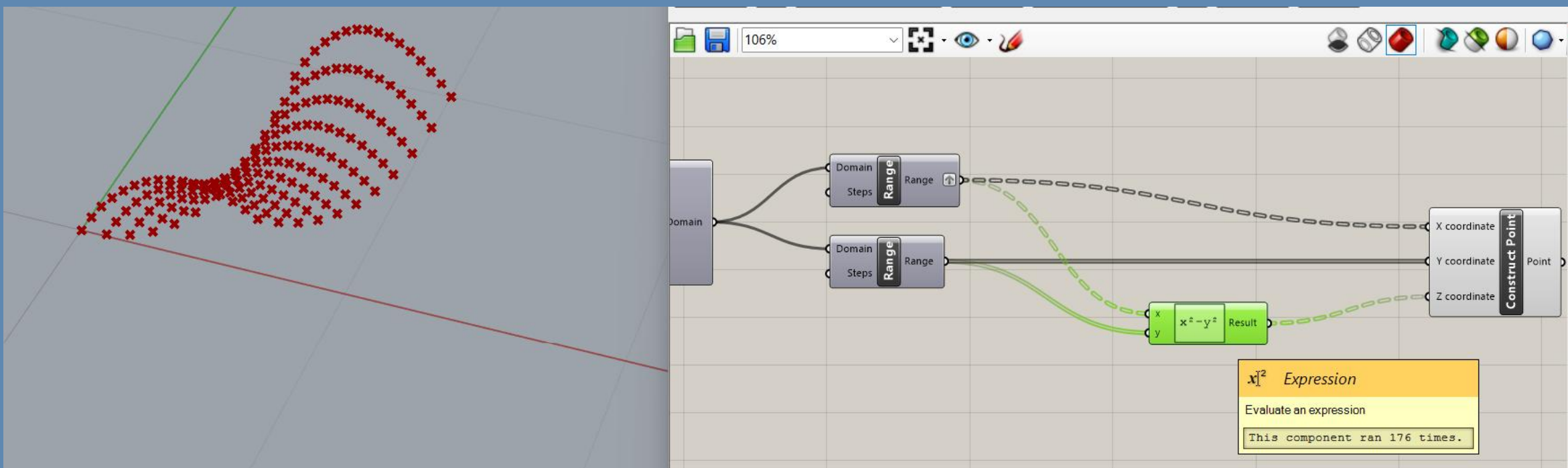
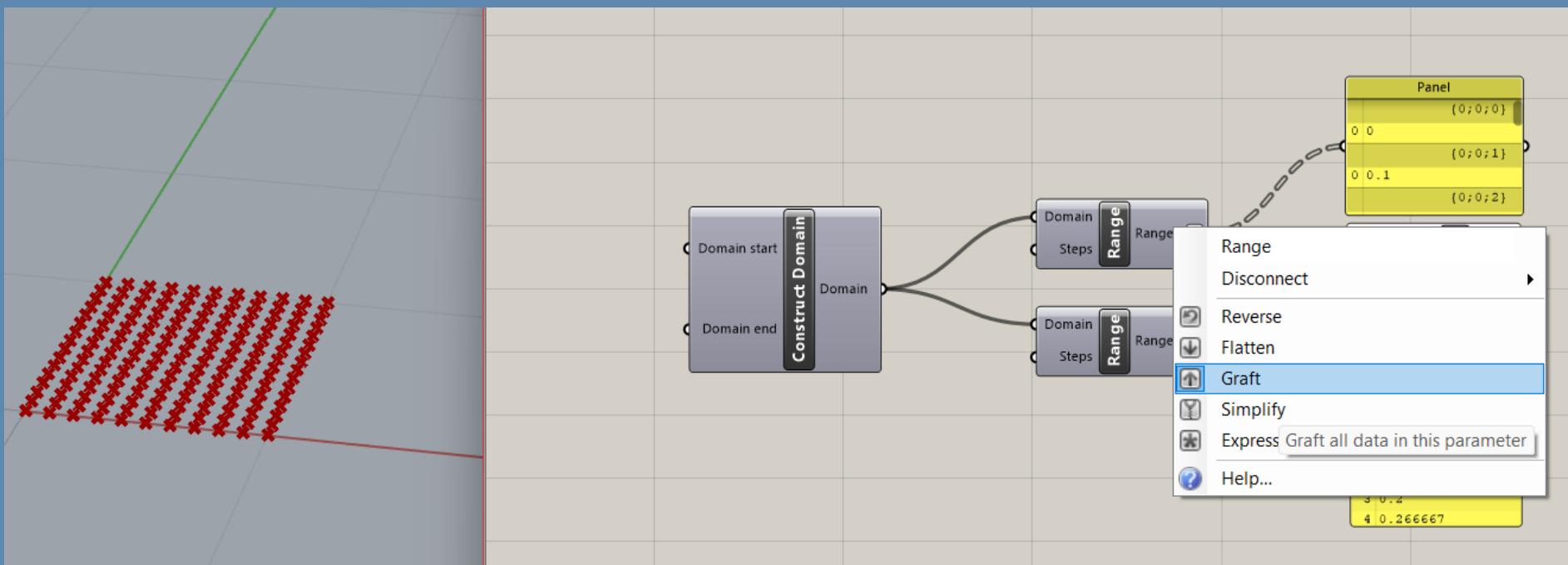
TORUS

Depois fizemos uma superfície curva no GRASSHOPPER



SUPERFÍCIE CURVA

Depois fizemos uma superfície curva no GRASSHOPPER

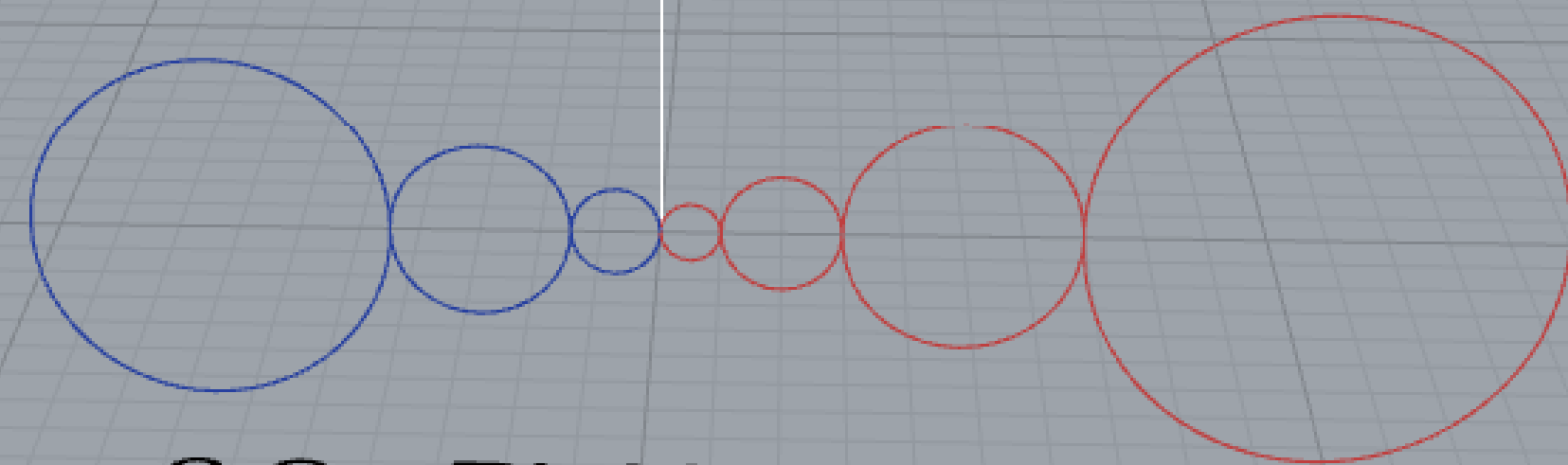


BAKE

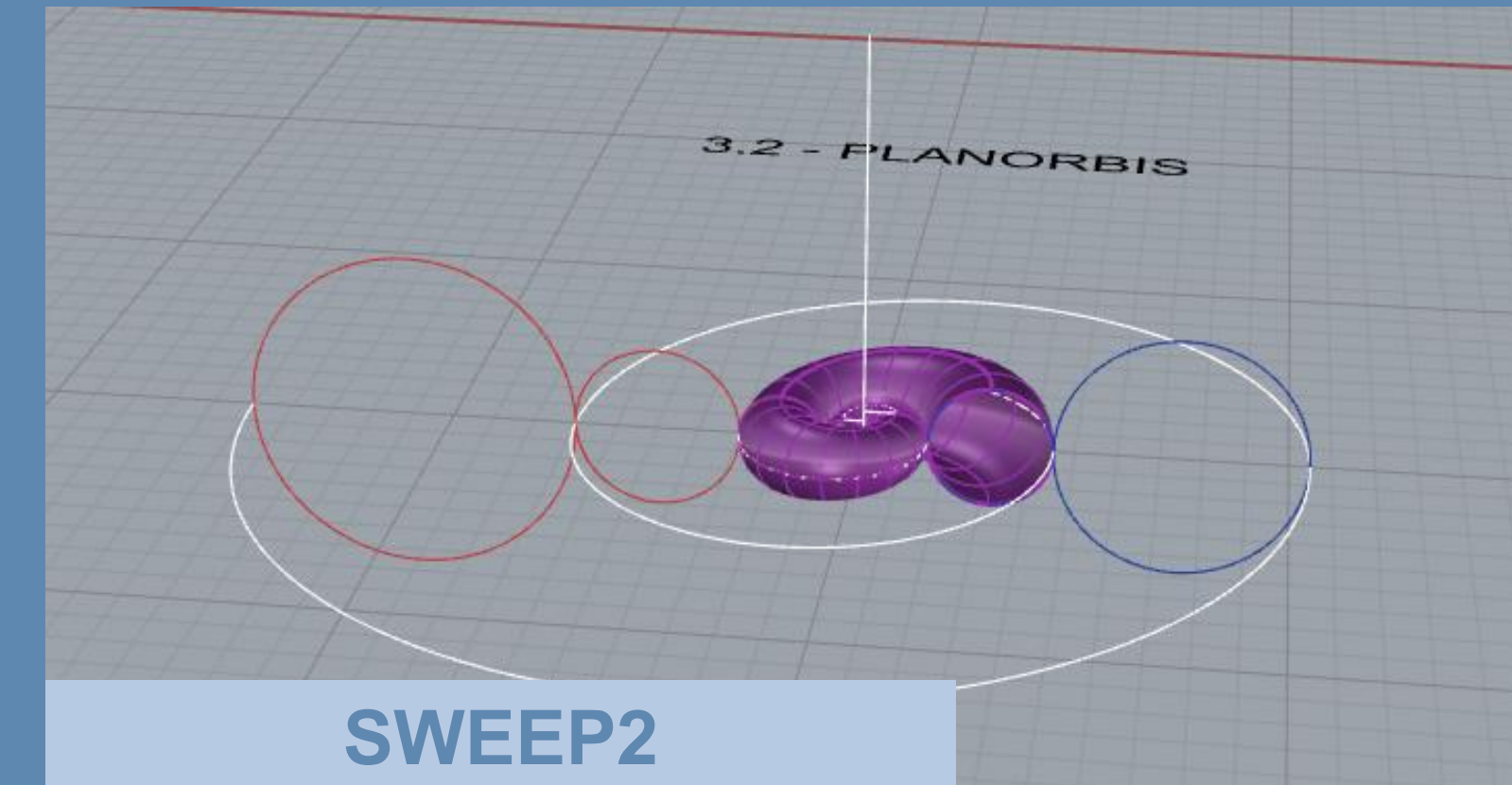
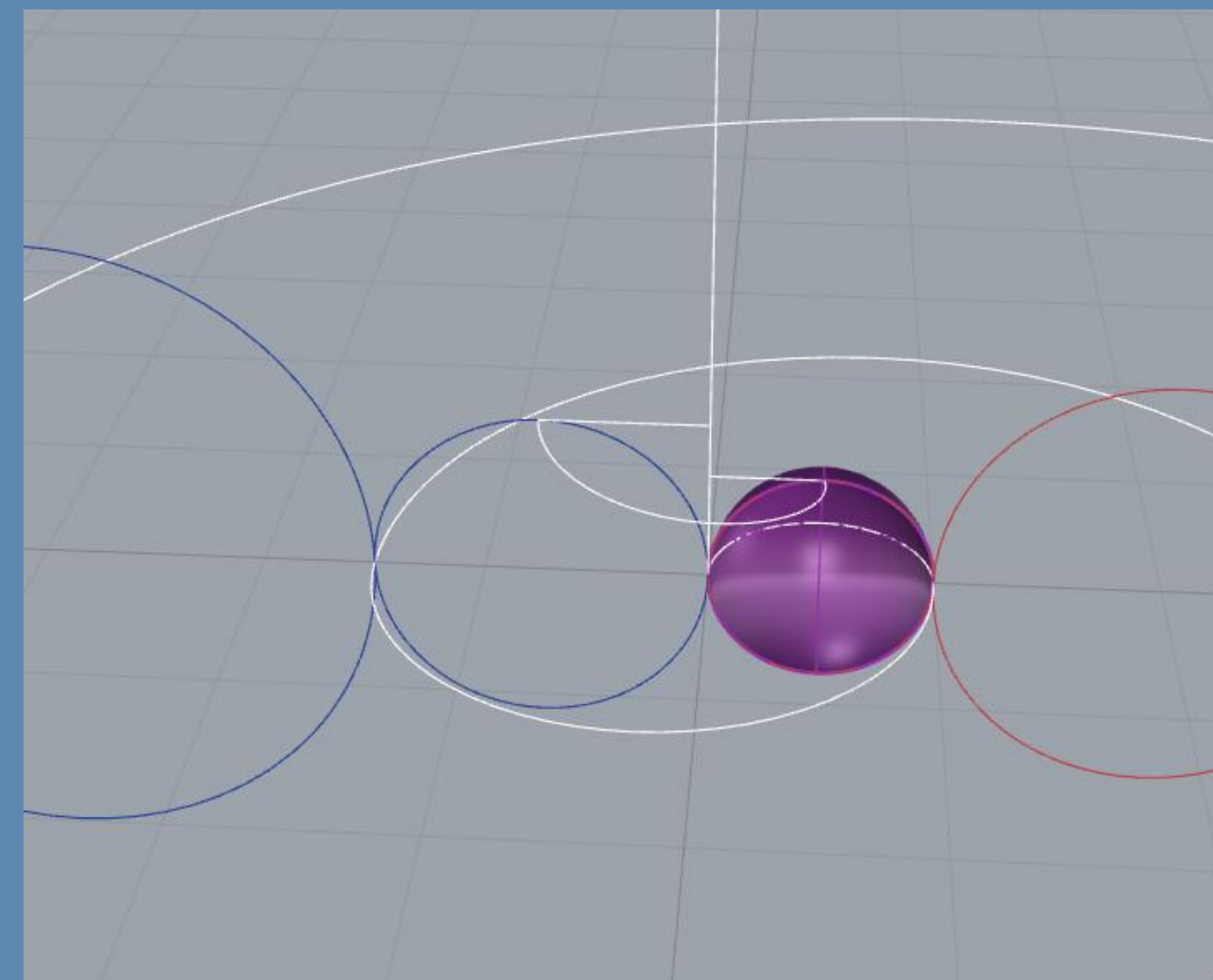
SUPERFÍCIE CURVA

AULA. 11 – MOLUSCOS- PLANORBIS, NAUTILUS E CARACOL

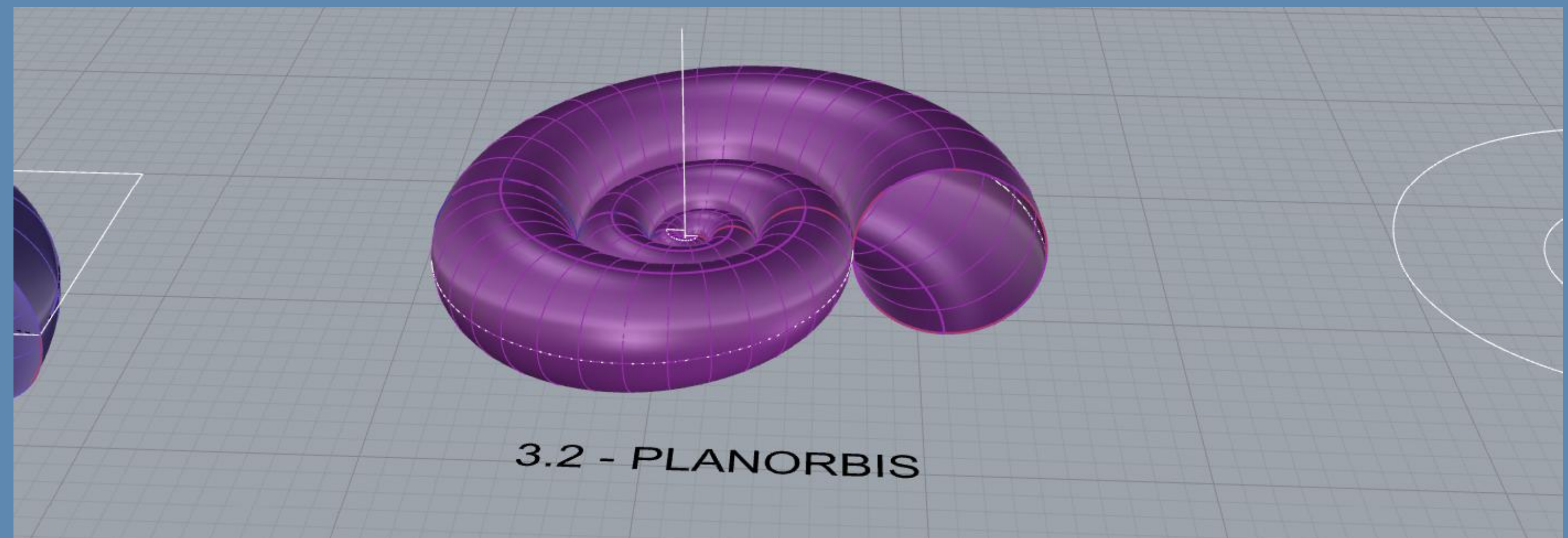
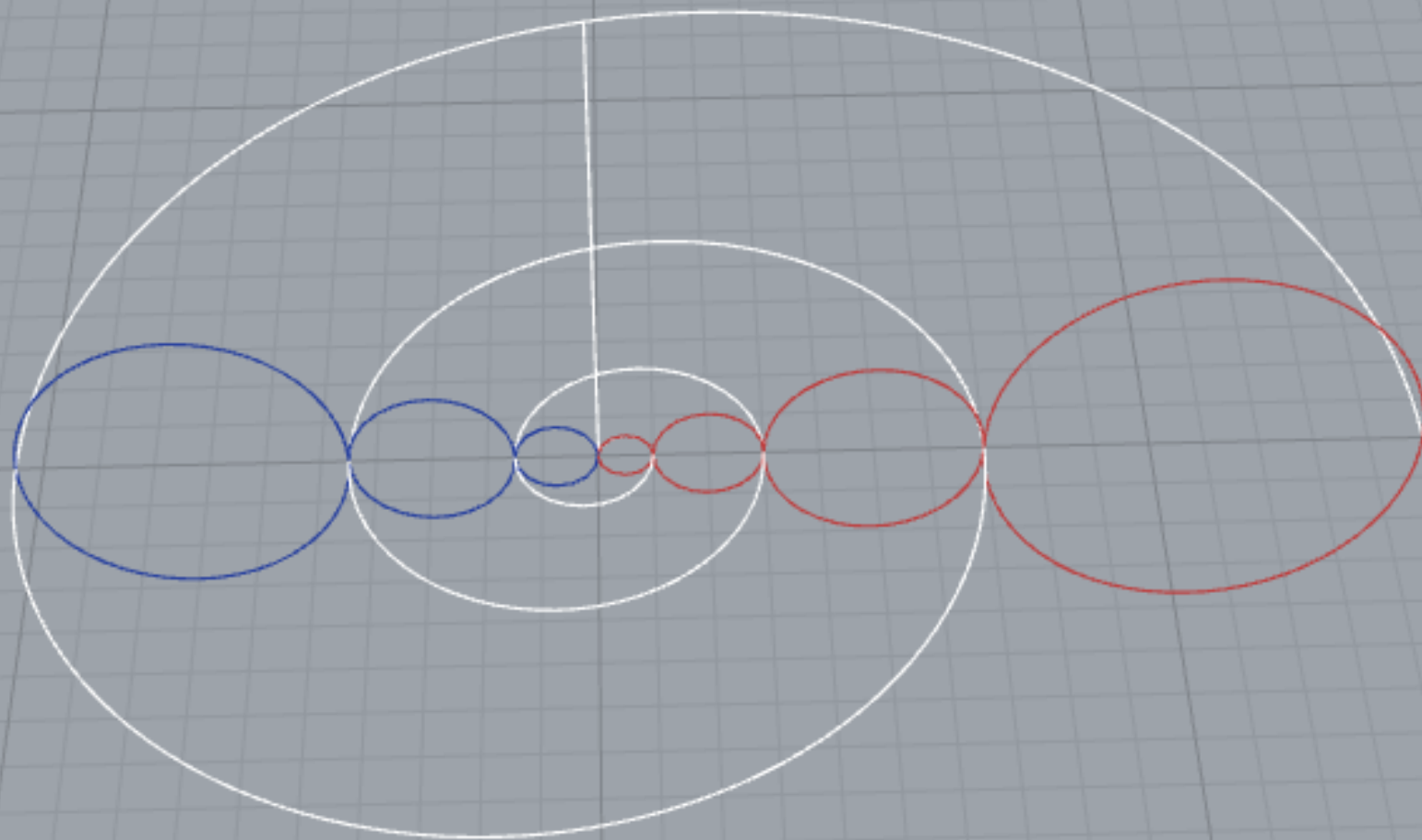
Traçamos circunferências para determinar a forma e ainda 2 rails para fazer o **SWEEP2**



3.2 - PLANORBIS



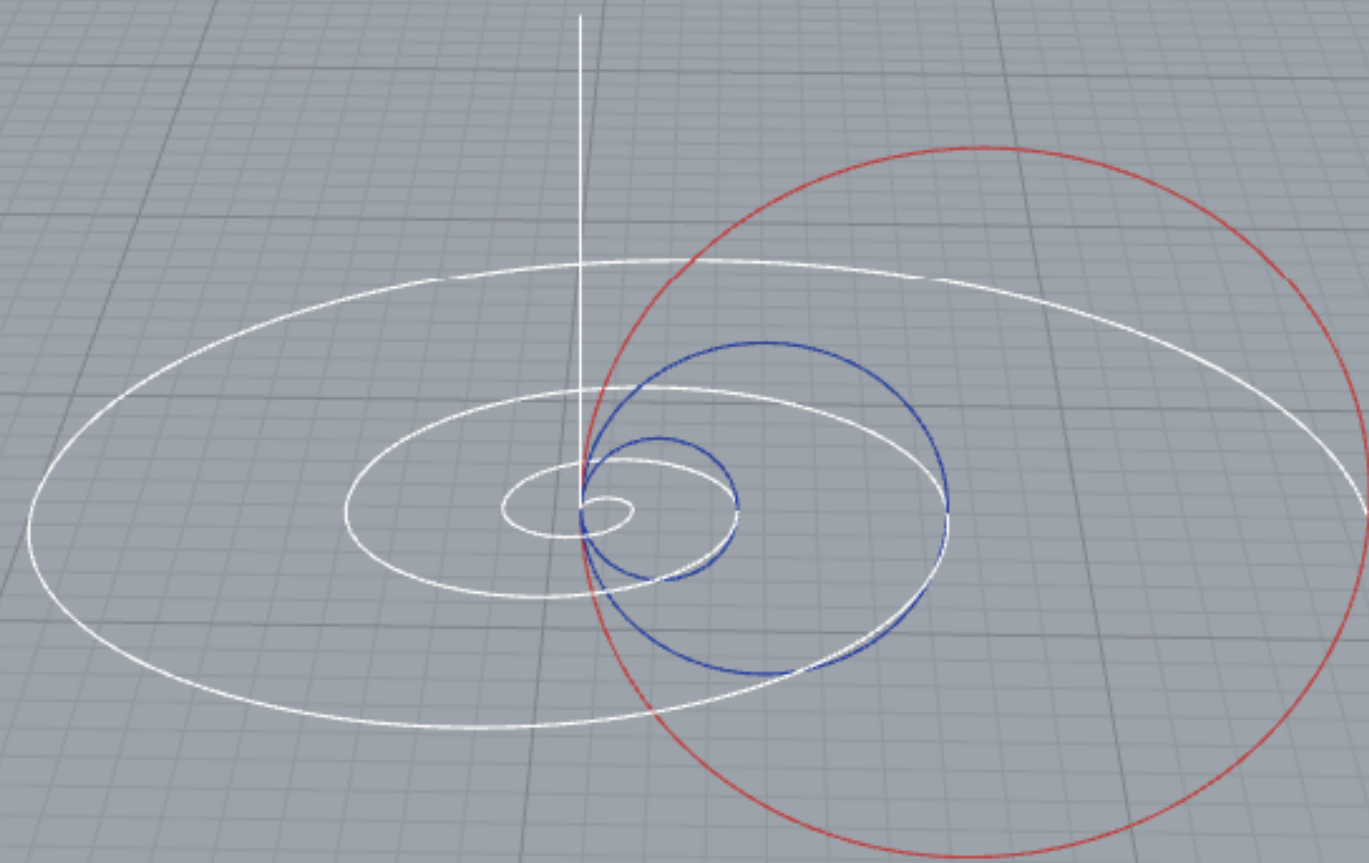
SWEEP2



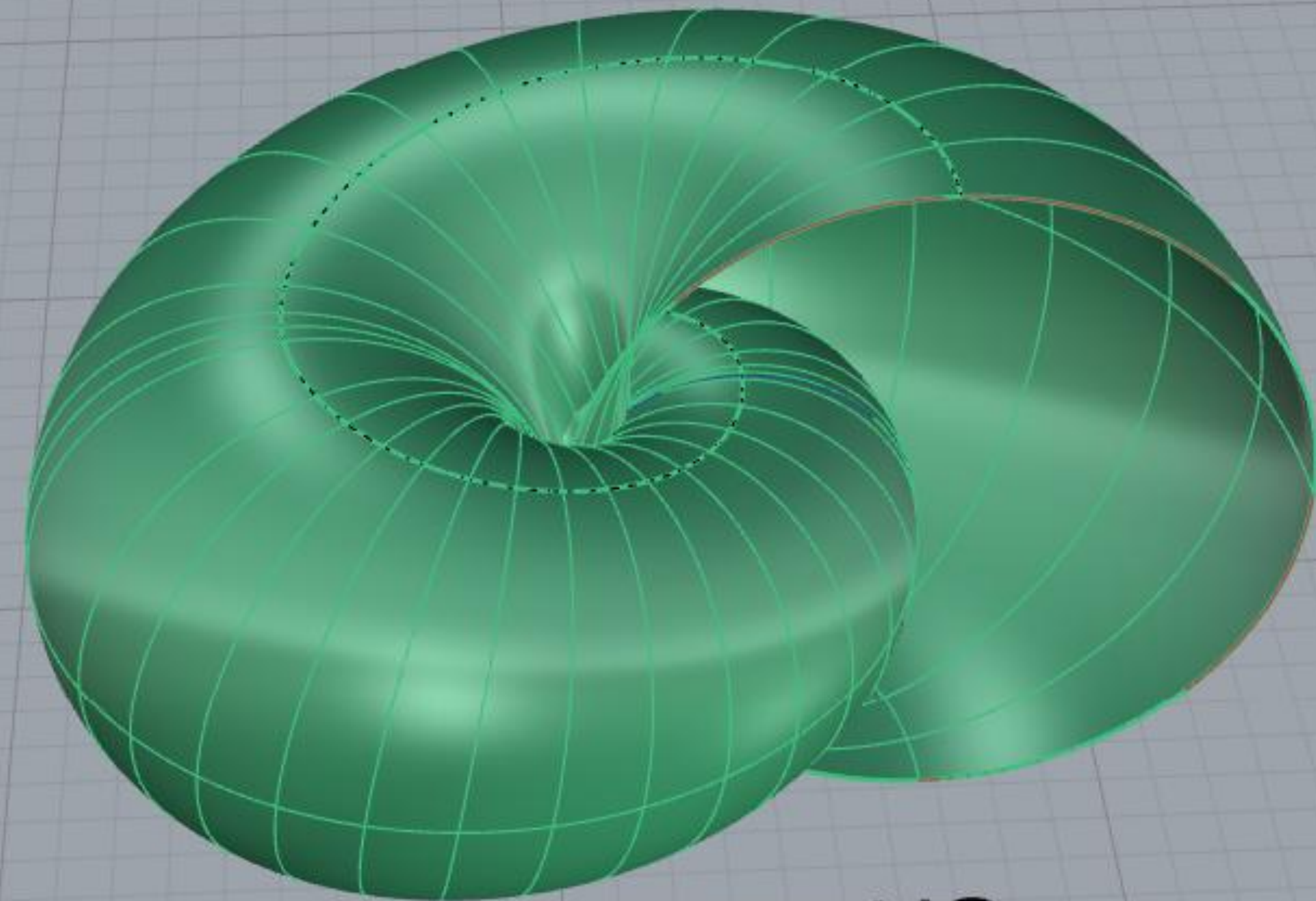
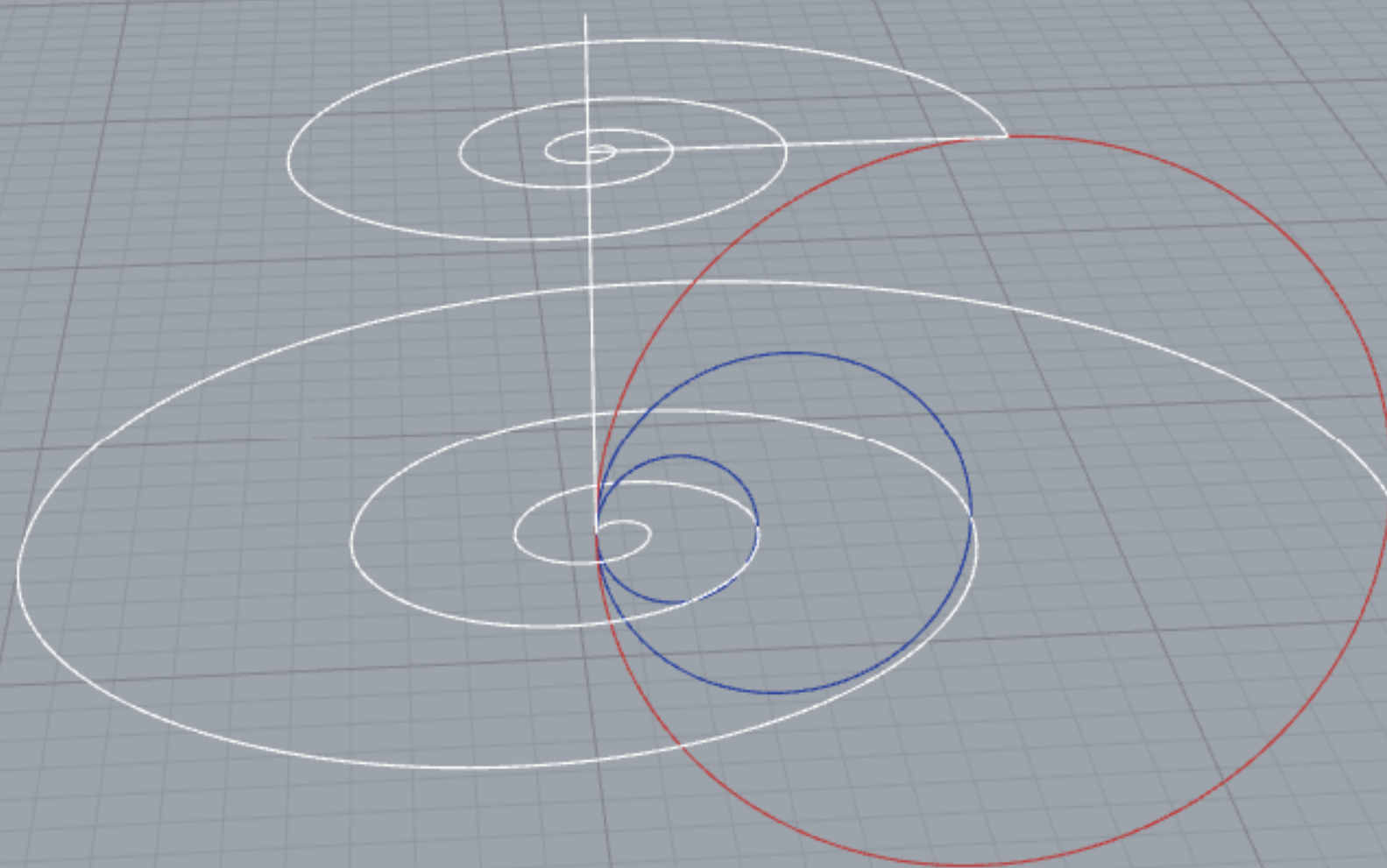
3.2 - PLANORBIS

PLANORBIS

Com a mesma forma traçamos novas geratrizes para criar um novo molusco



3.3 - NAUTILUS



3.3 - NAUTILUS

NAUTILUS

Com a mesma forma traçamos novas geratrizes para criar um novo molusco

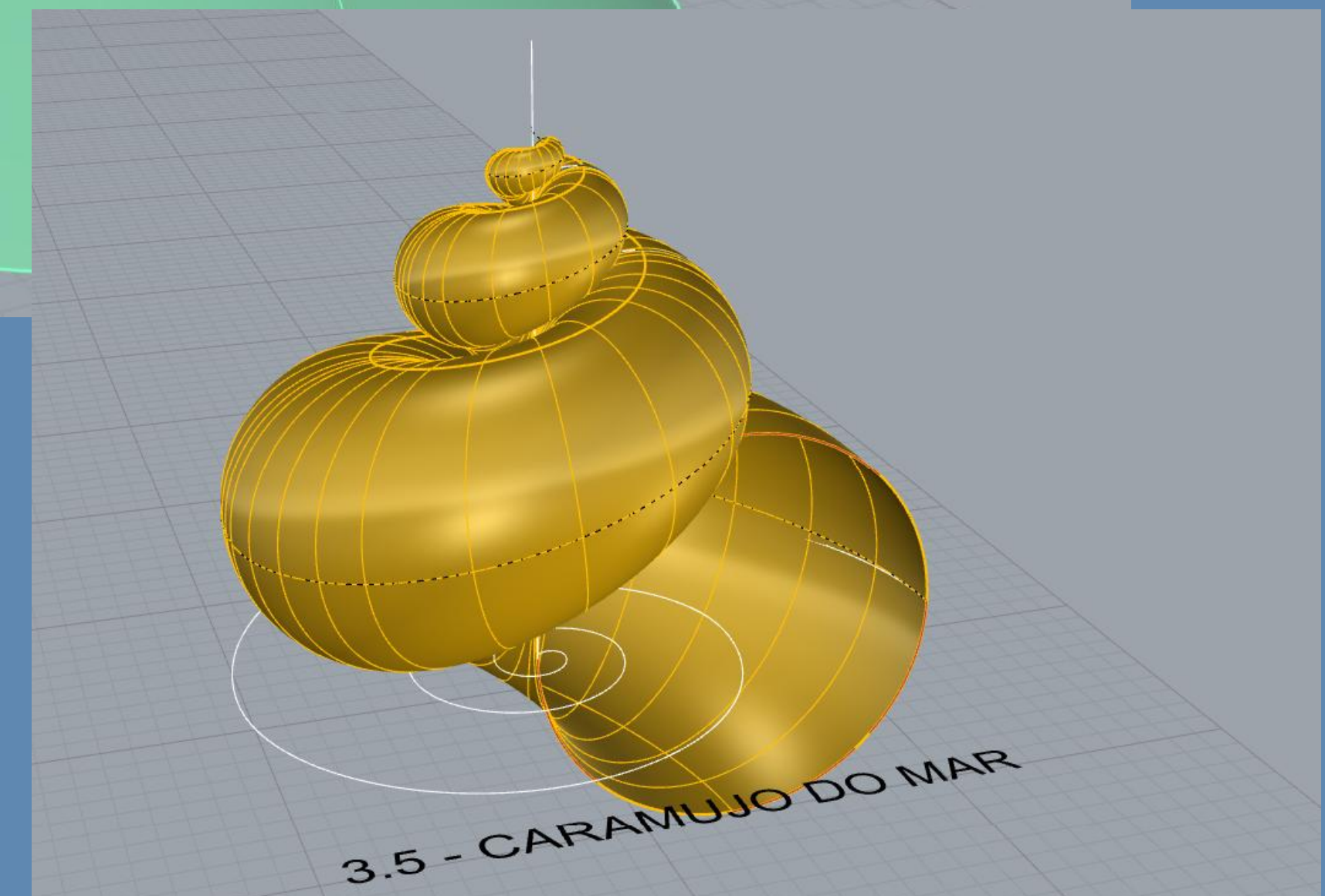
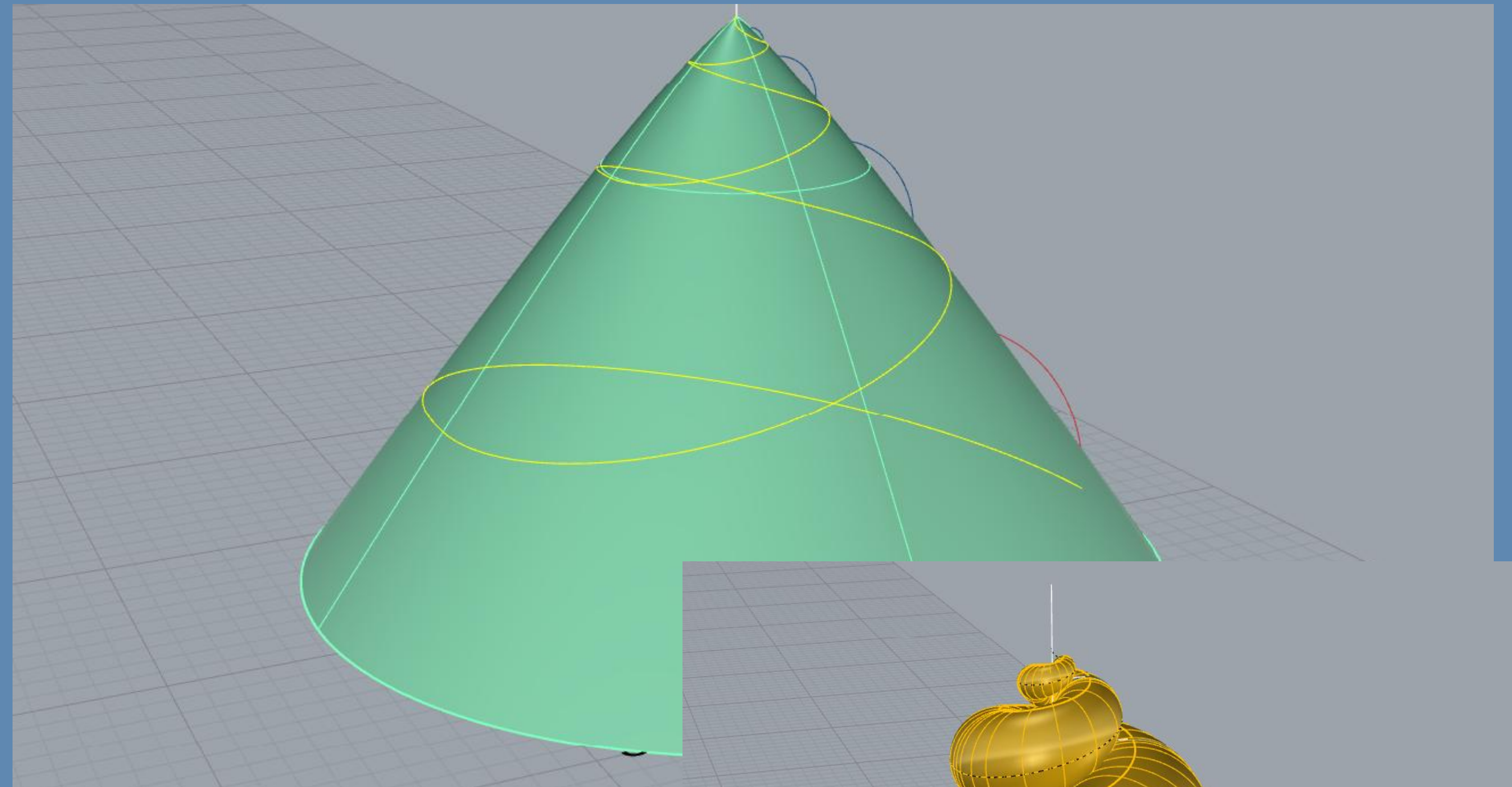
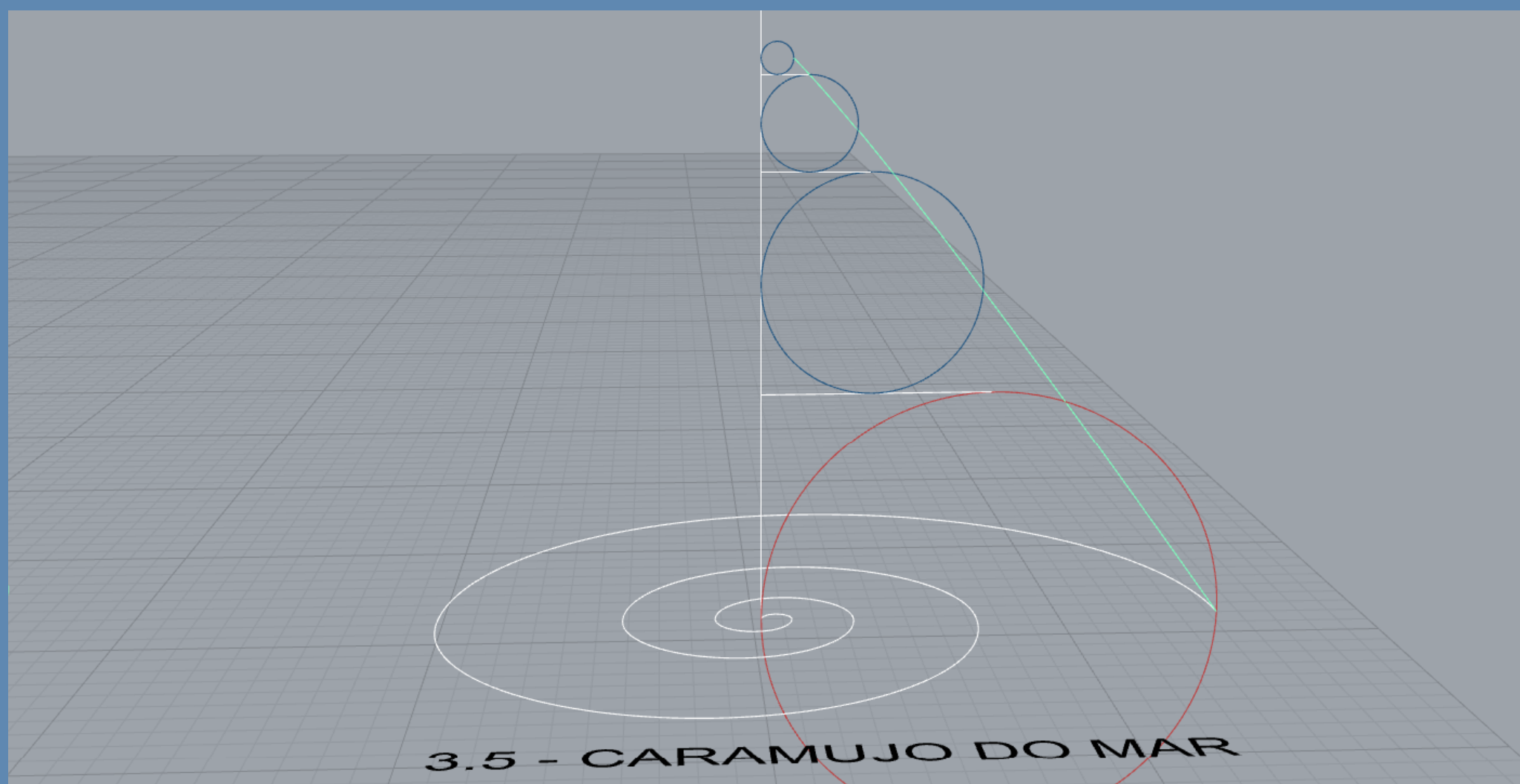
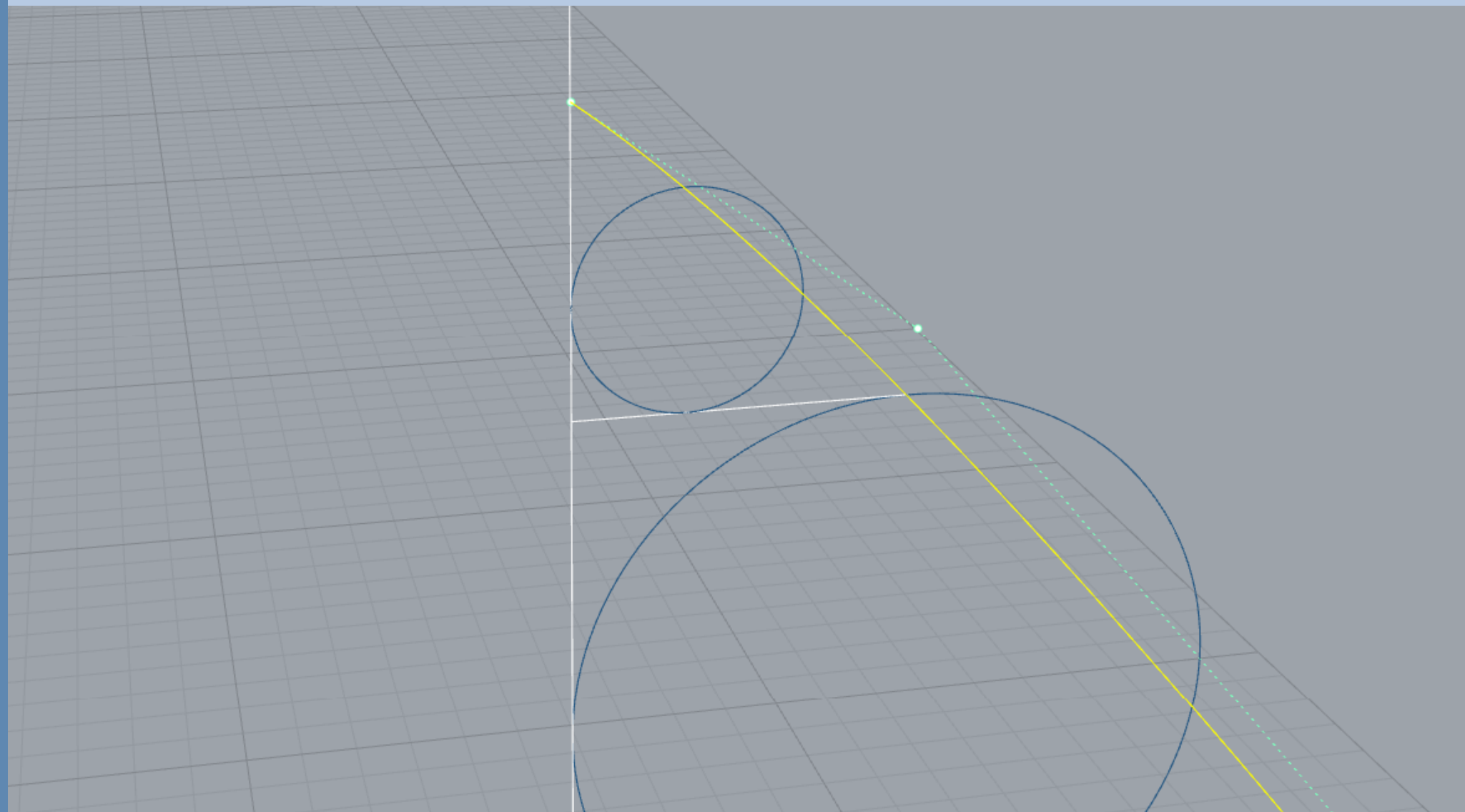
3.4 - CARACOL

3.4 - CARACOL

CARACOL

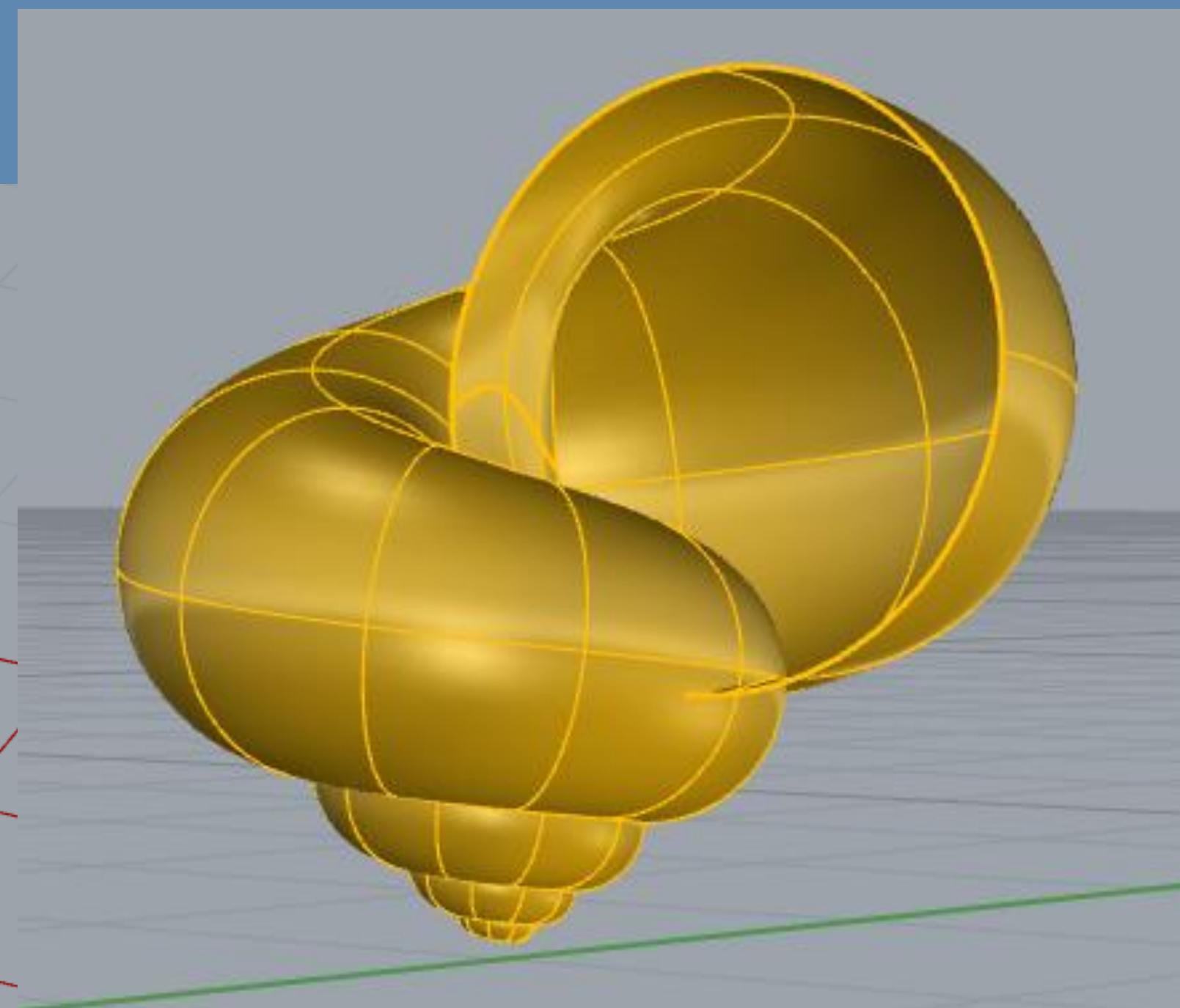
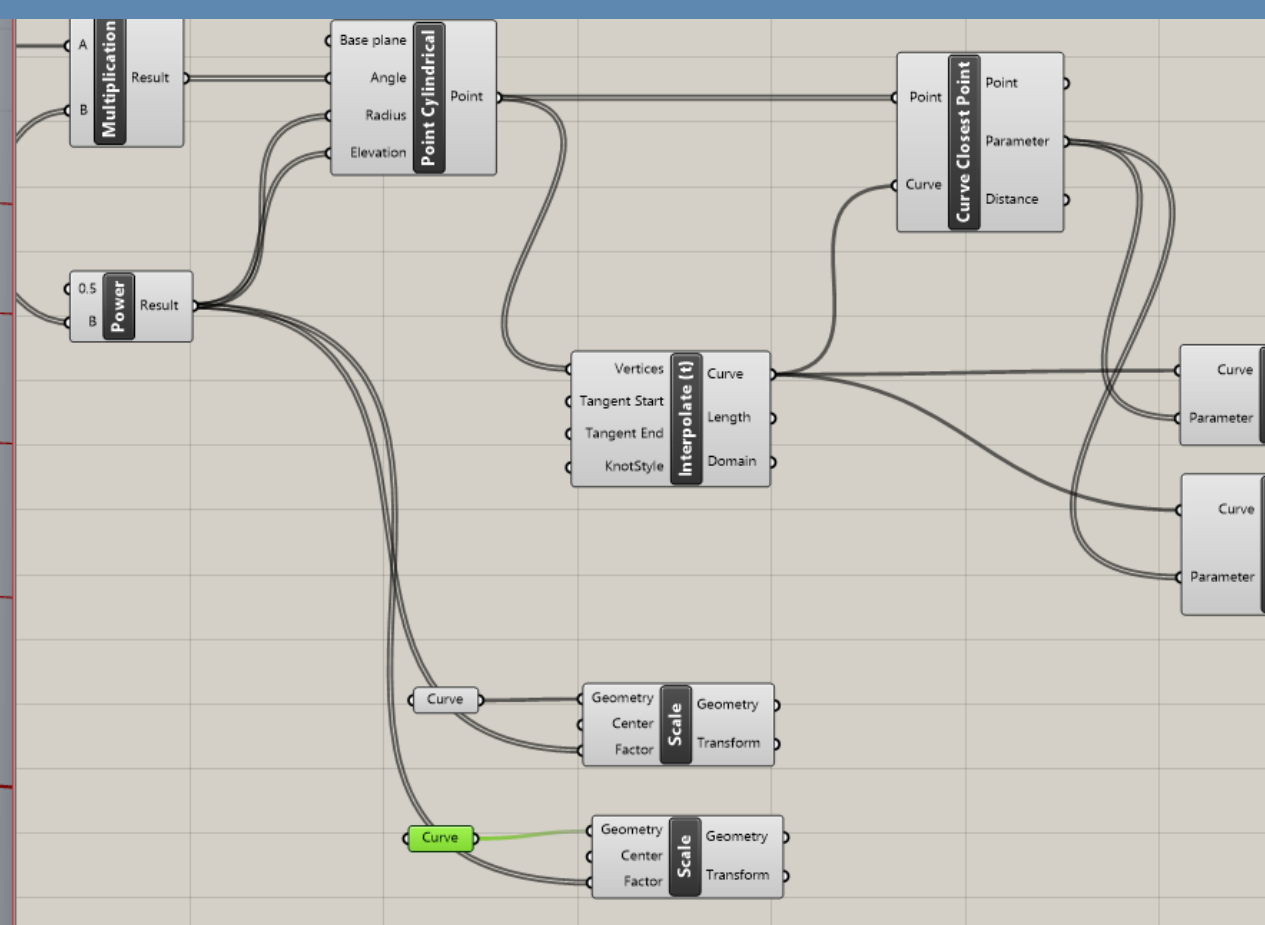
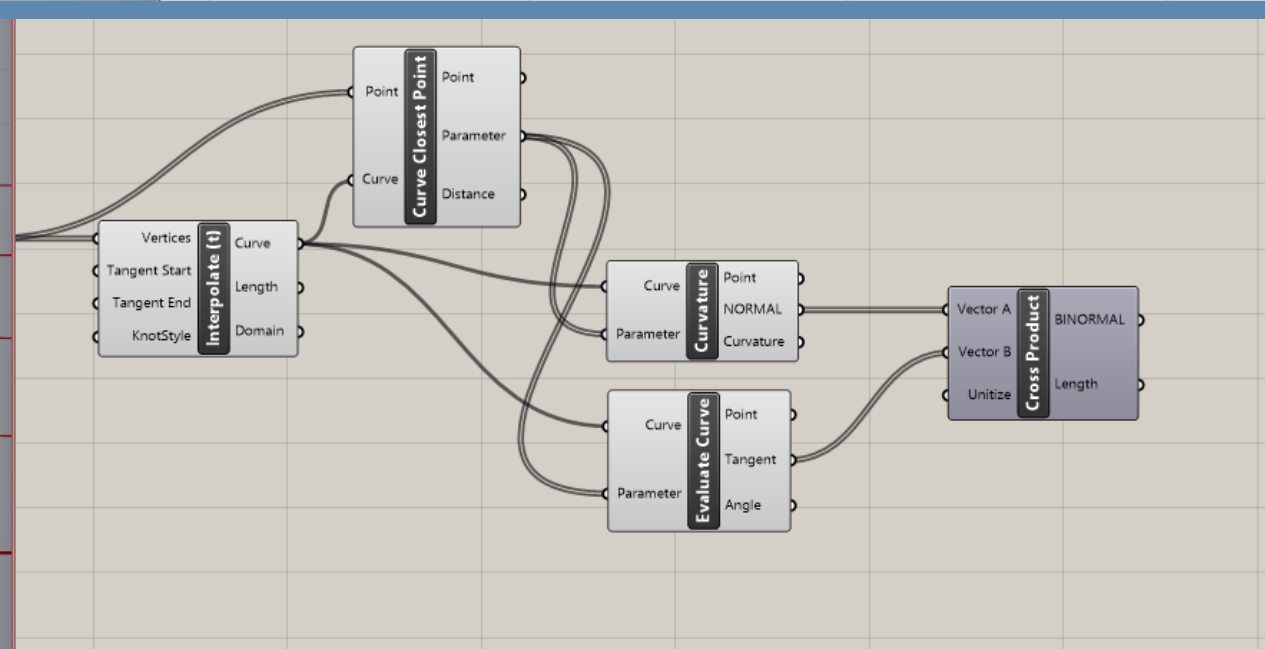
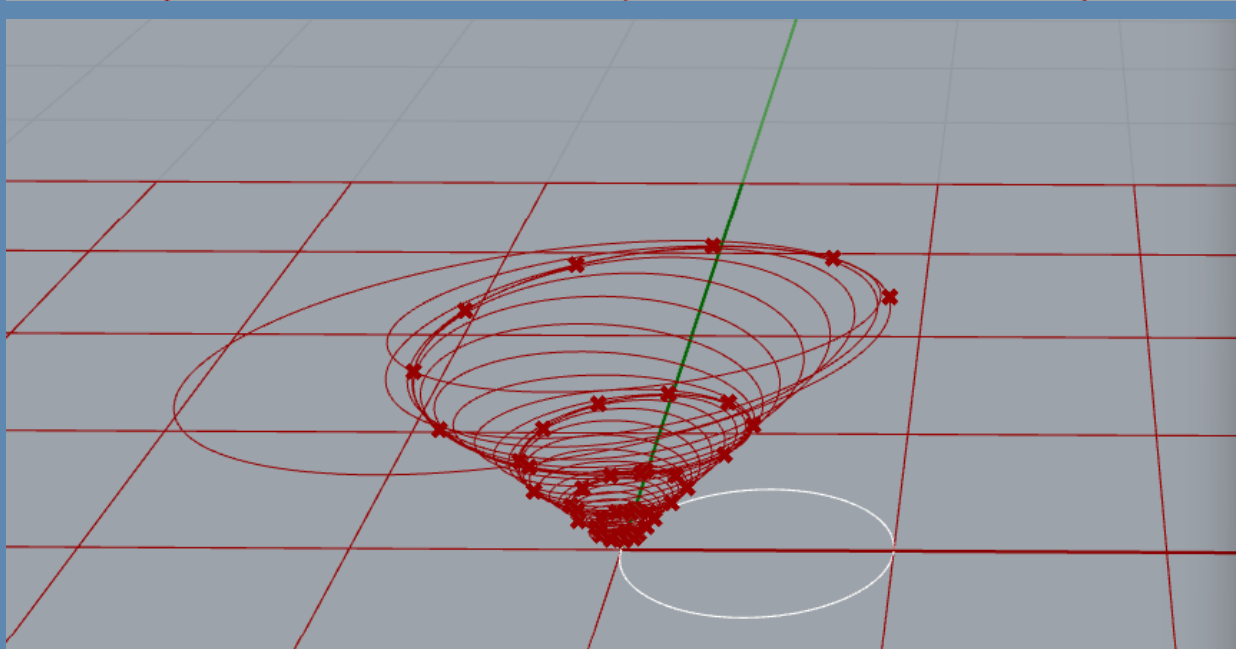
AULA. 11 – MOLUSCOS- CARAMUJO DO MAR E GRASSHOPPER

Traçámos uma linha curva a passar pelos quadrantes de cada geratriz e fizemos um cone para a curva



CARAMUJO DO MAR

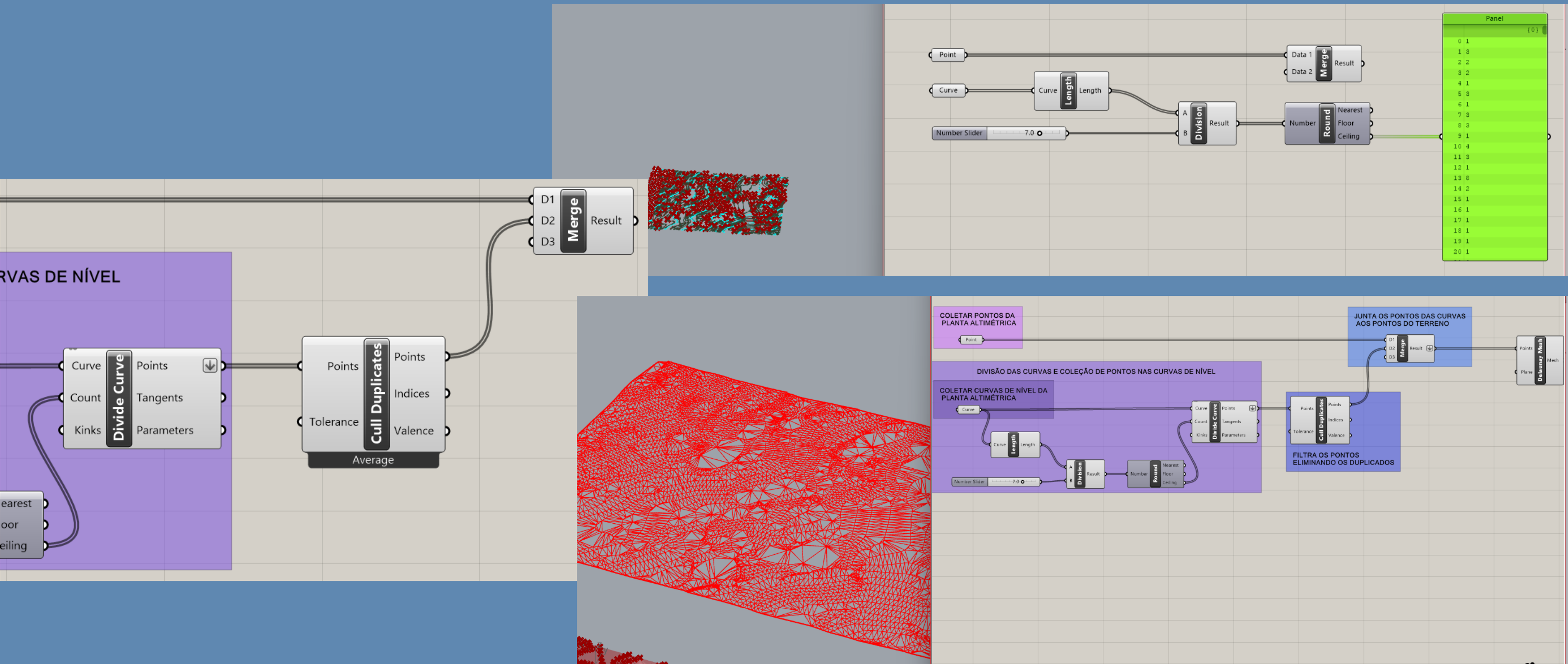
Com a mesma forma traçámos novas geratrizes para criar um novo molusco



CARAMUJO DO MAR NO GRASSHOPPER

AULA. 12 – TERRENO NO GRASSHOPPER

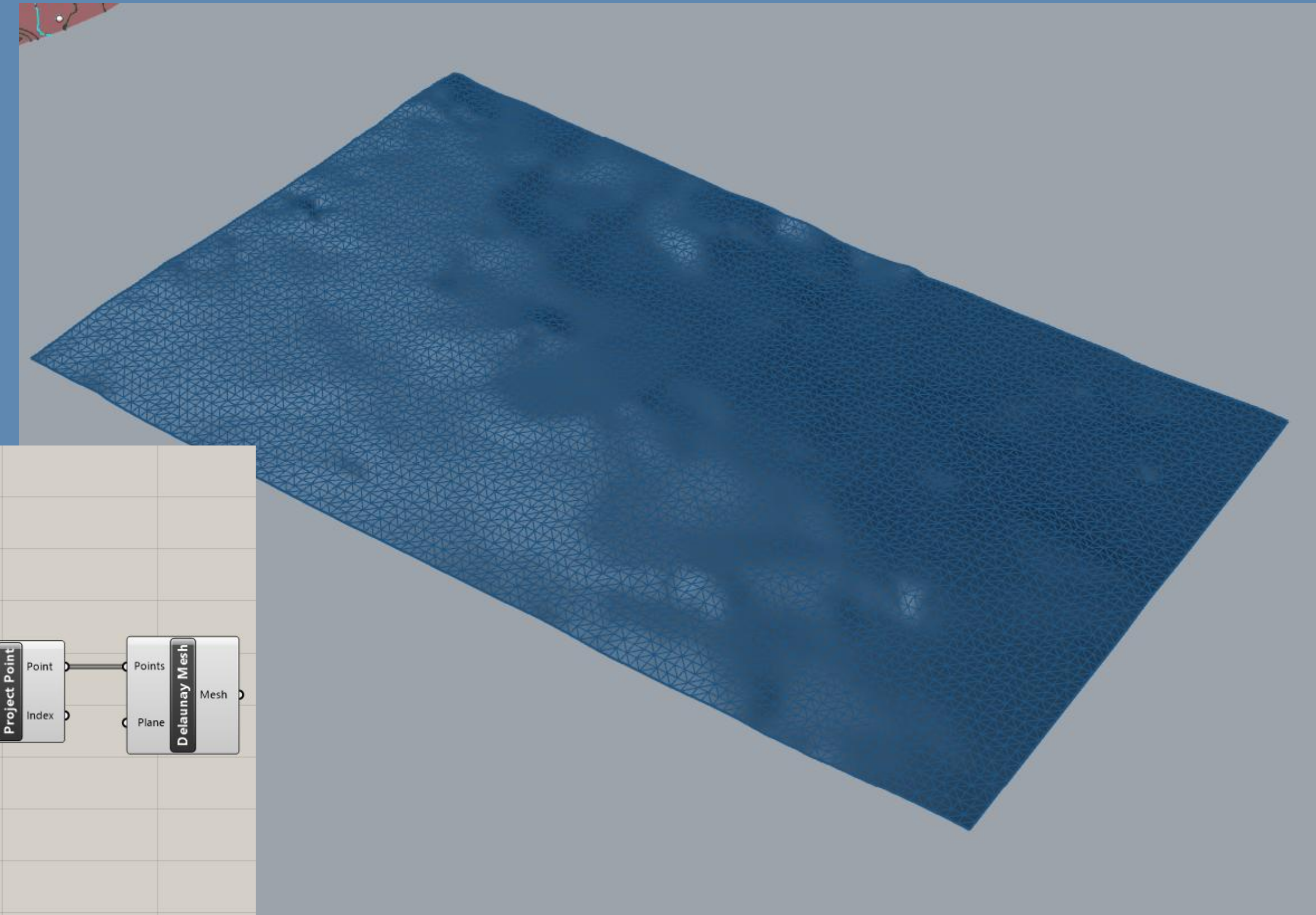
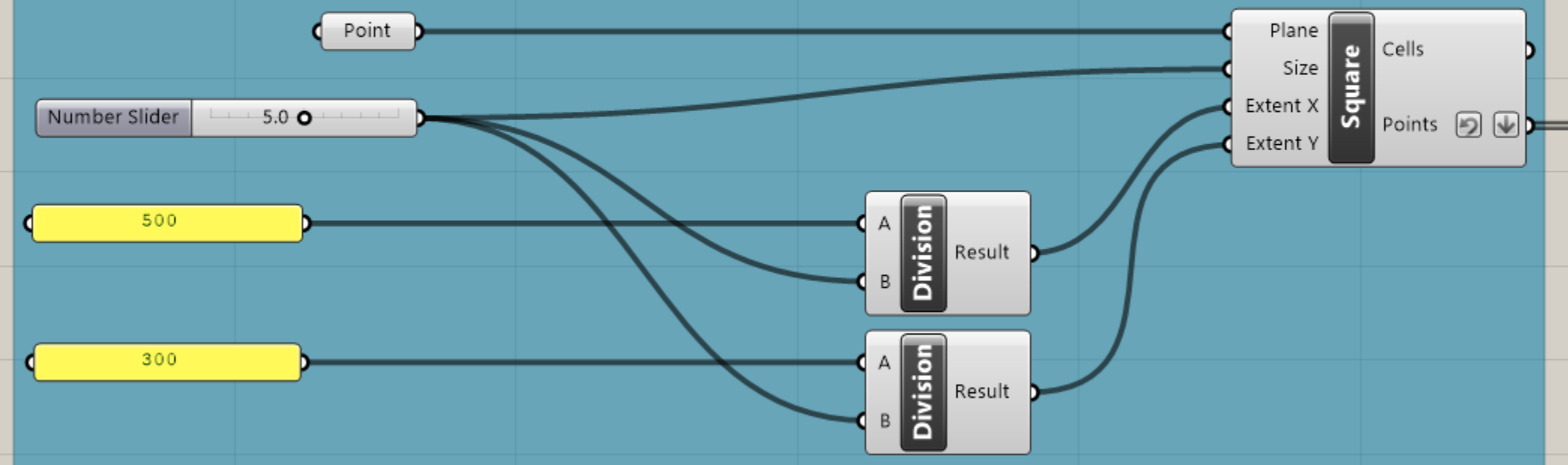
Importamos a planta do terreno e começamos a modelá-lo em GRASSHOPPER



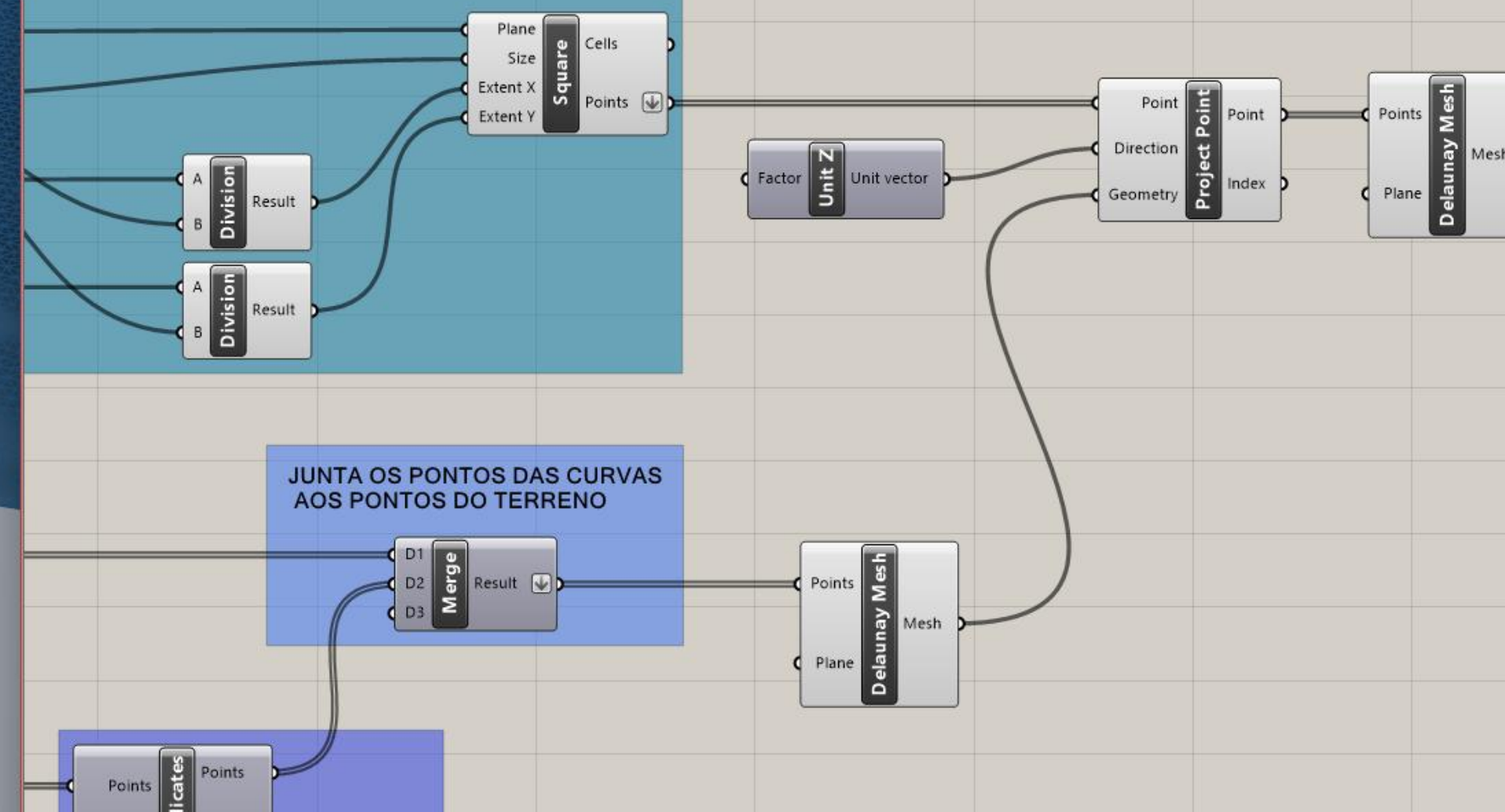
TERRENO NO GRASSHOPPER

Com a mesma forma traçamos novas geratrizes para criar um novo molusco

CRIA UMA GRELHA QUADRICULADA NA ÁREA SELECIONADA



QUADRICULADA NA ÁREA SELECIONADA



JUNTA OS PONTOS DAS CURVAS
AOS PONTOS DO TERRENO

TERRENO NO GRASSHOPPER