

MODELAÇÃO GEOMÉTRICA E GENERATIVA

20241410

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6.1 Arco semicircular

6.2 Divisão do arco

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6.4 Repetição

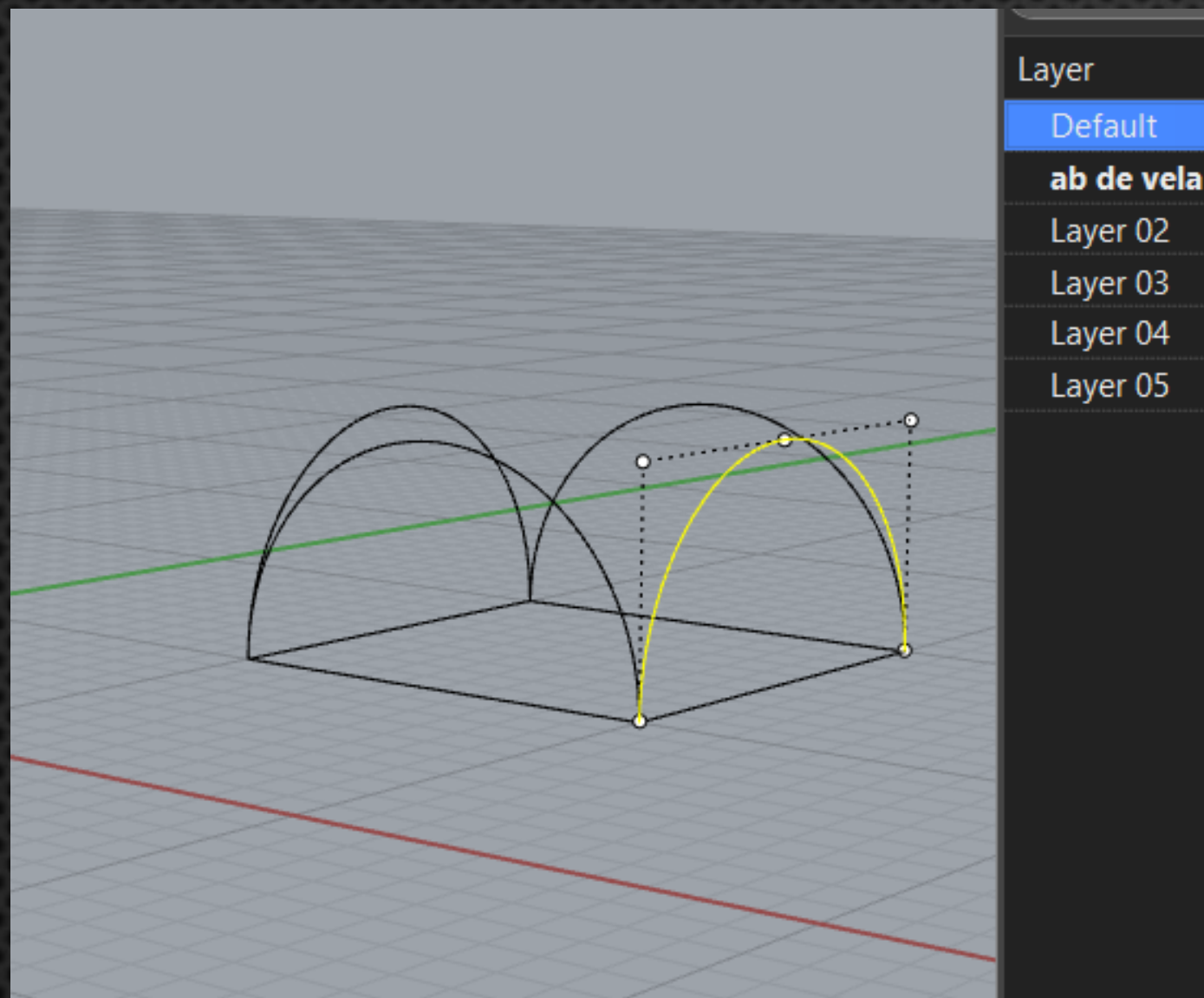
6.5 Criação de secções

6.6 Formação da cúpula

Conclusão

TRABALHO 2

1. Abobada de vela



Passo 1 – Criar o cubo

Escrever o comando **Box** na barra de comandos.

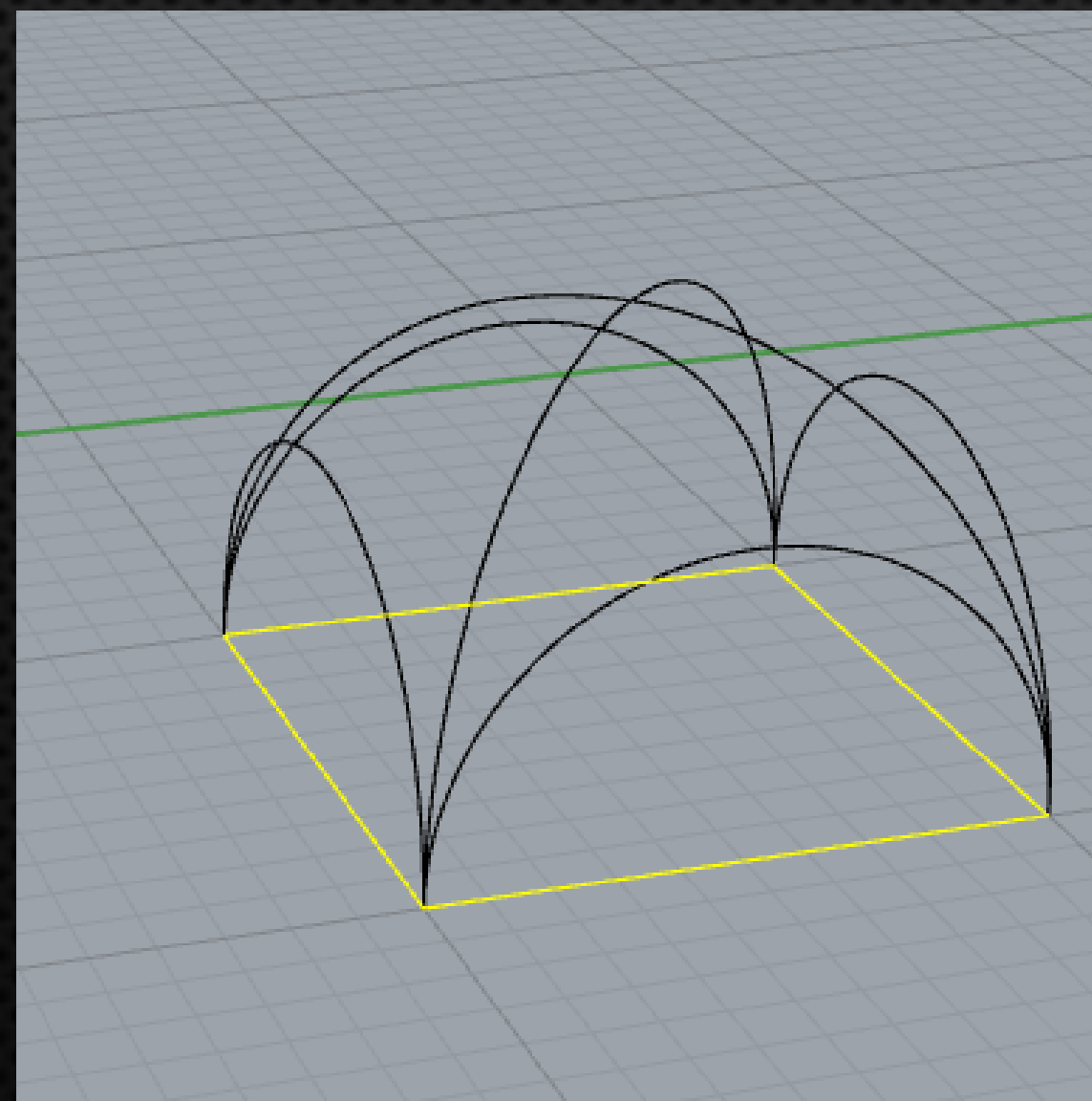
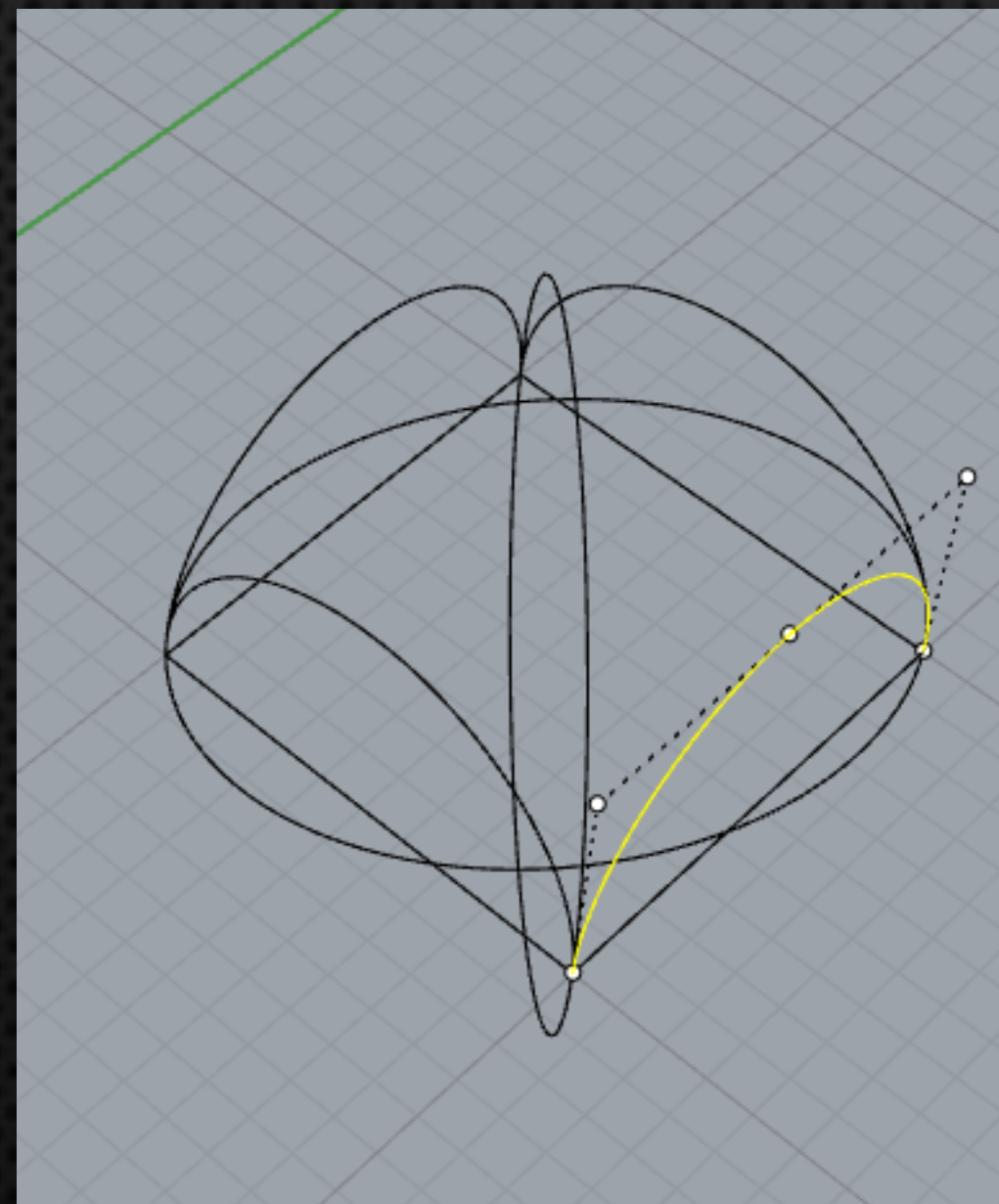
Clicar na vista **Top** para definir o primeiro ponto da base.

Definir o tamanho da base do quadrado e depois definir a altura para criar o cubo.

Passo 2:

Divide cada lado do quadrado em partes iguais

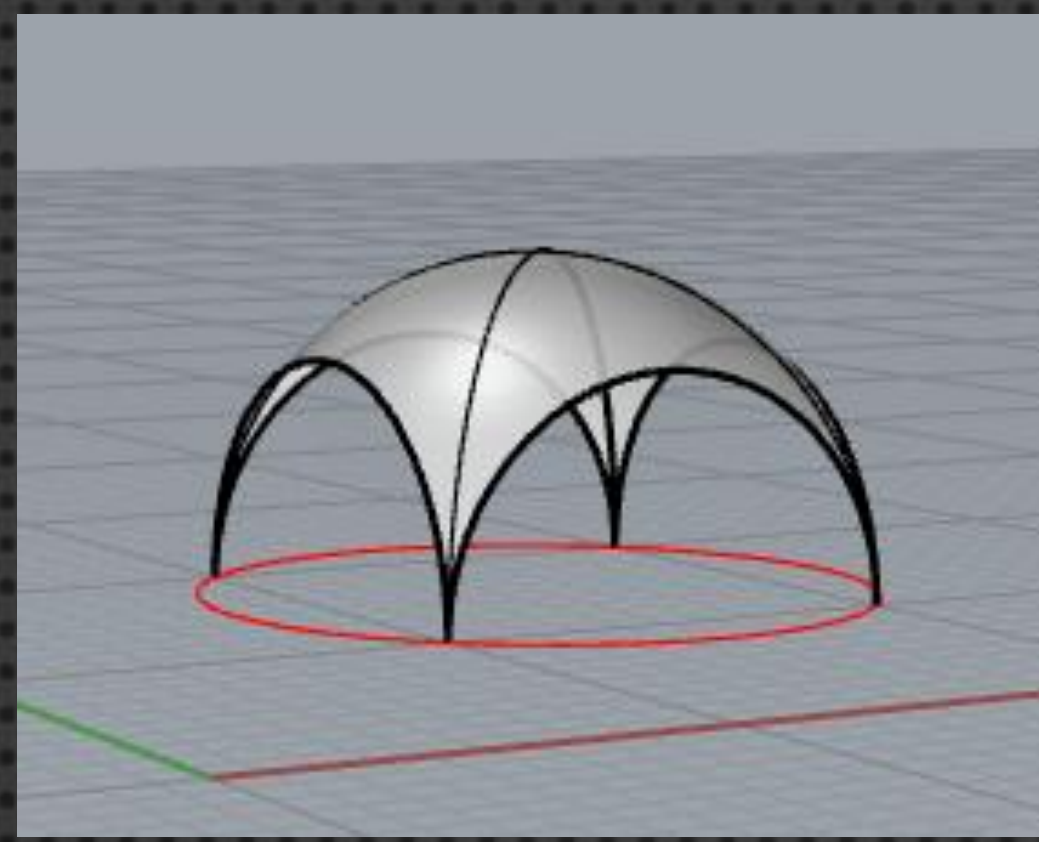
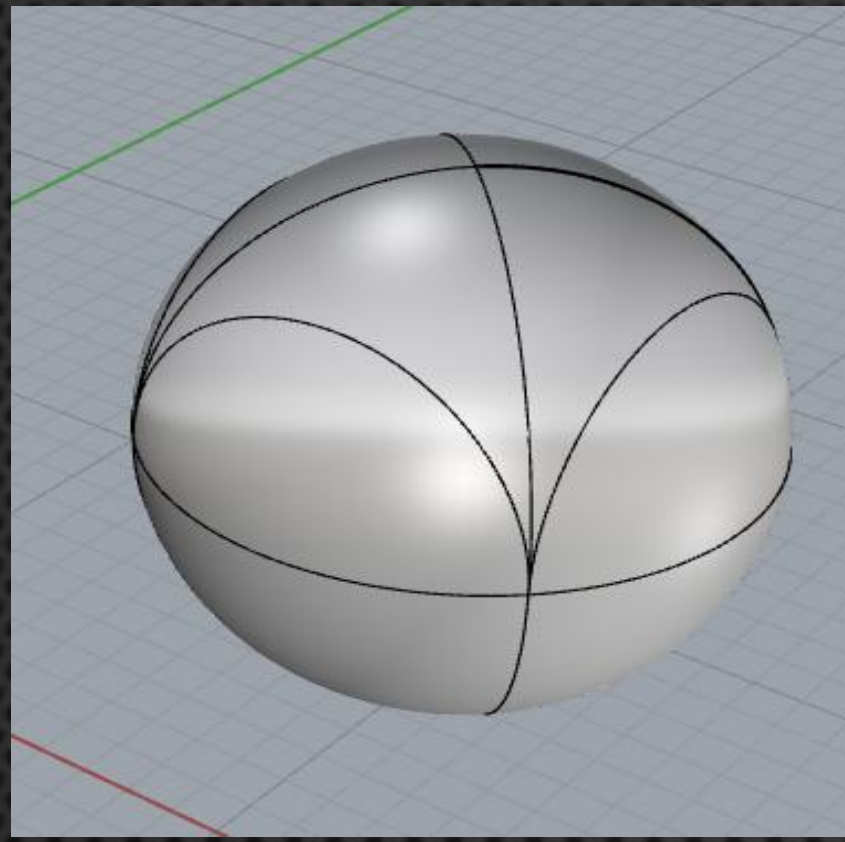
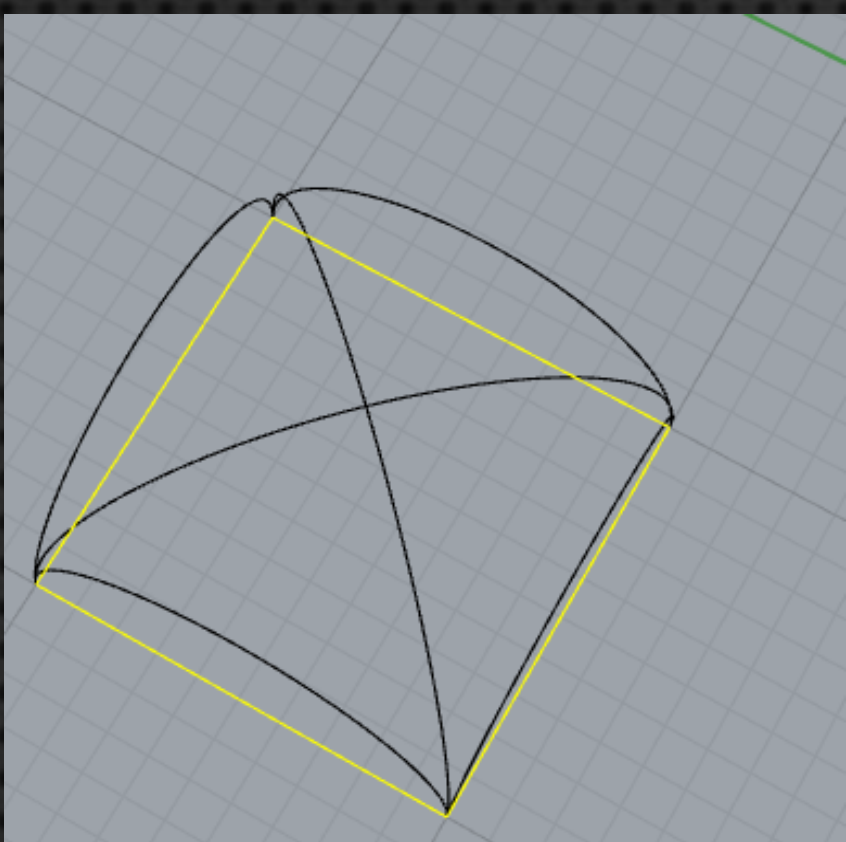
→ comando: Divide



Passo 3:

Liga os pontos opostos criando linhas nas duas direções

→ comando: Line



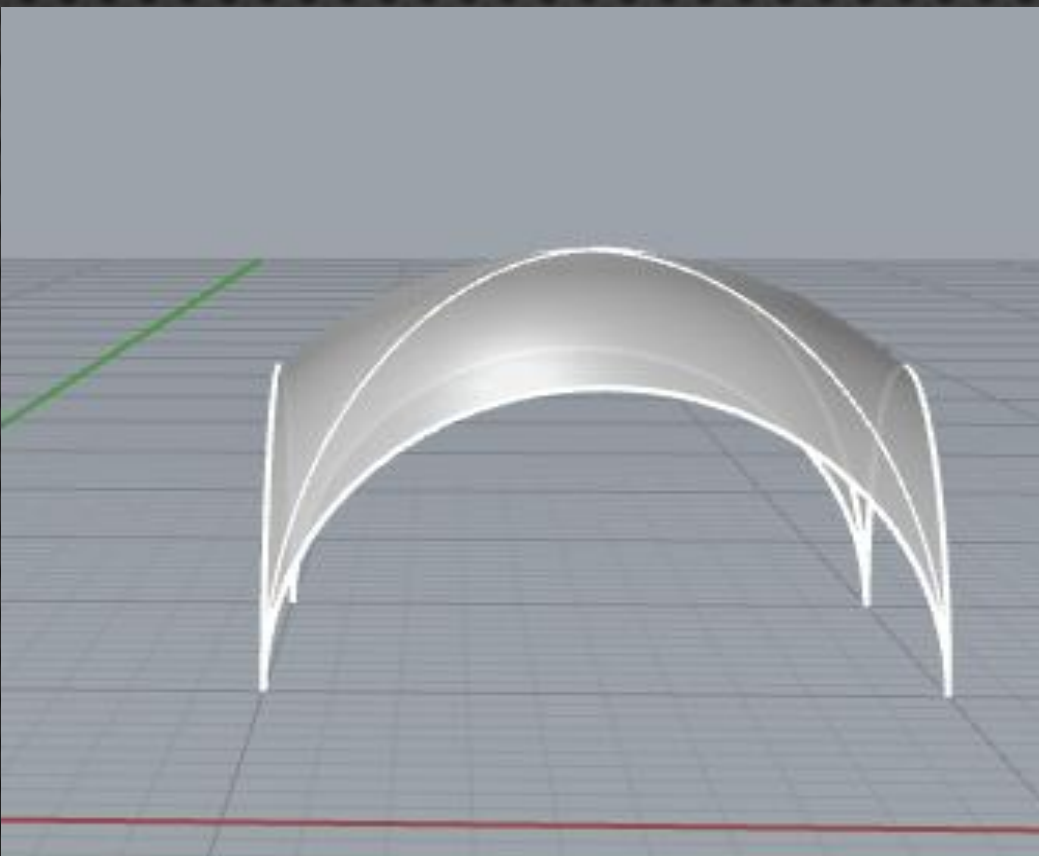
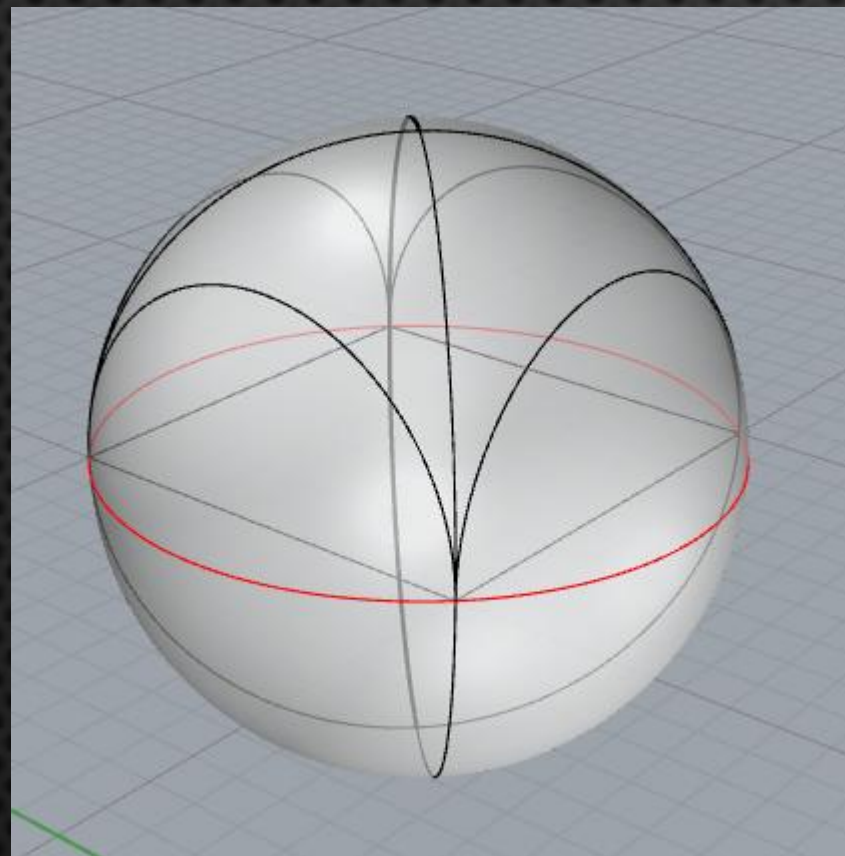
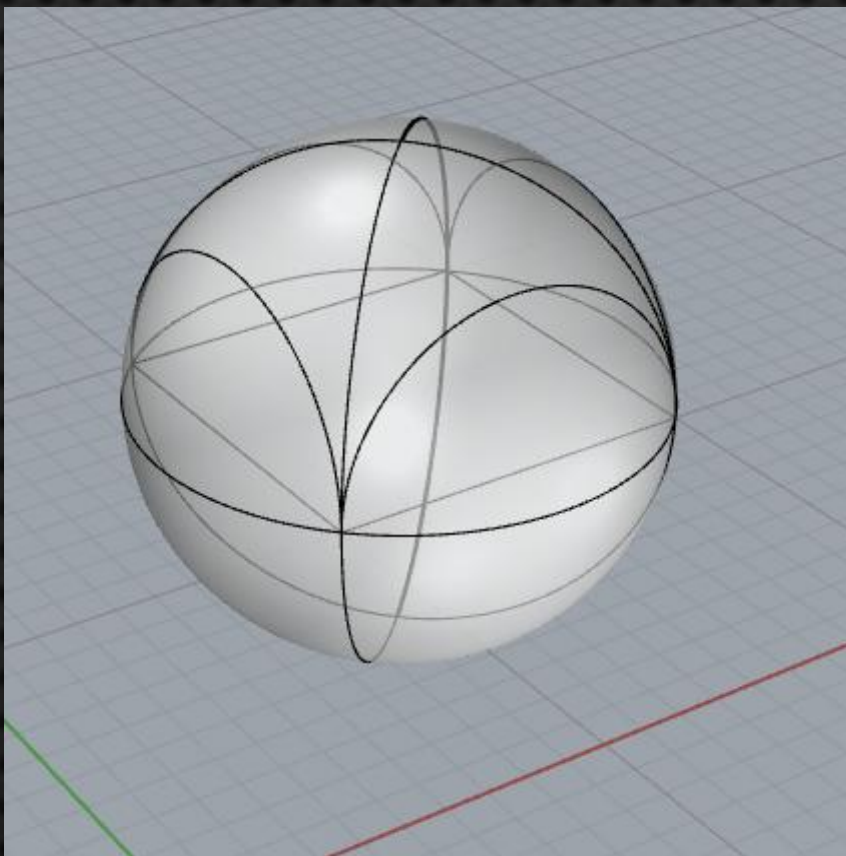
Passo 4:

Em cada linha, cria um arco com 3 pontos:

extremos na base

ponto central elevado

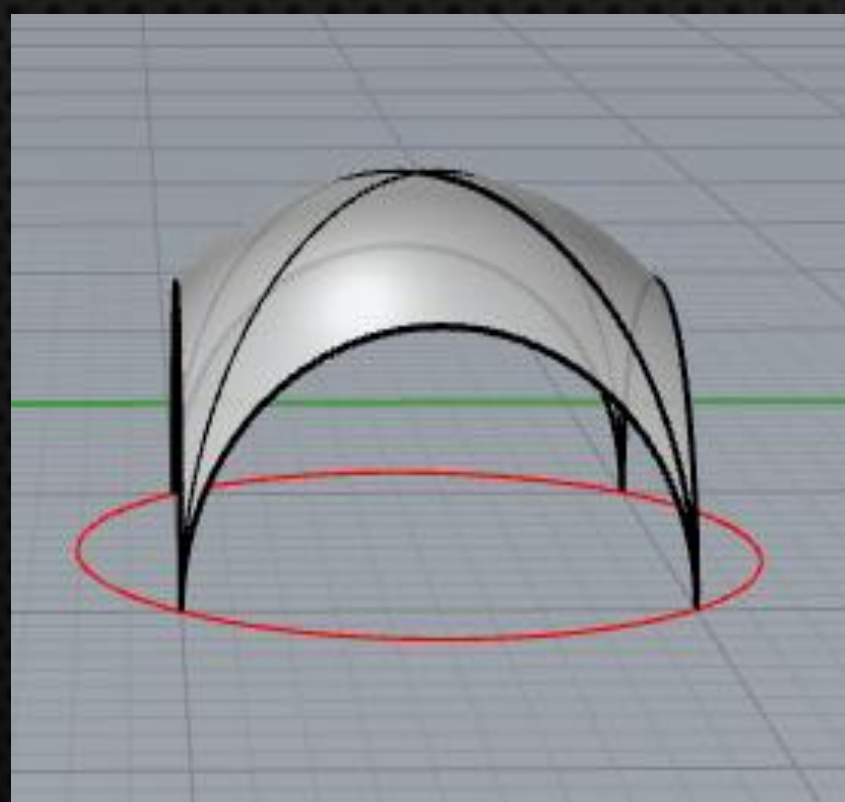
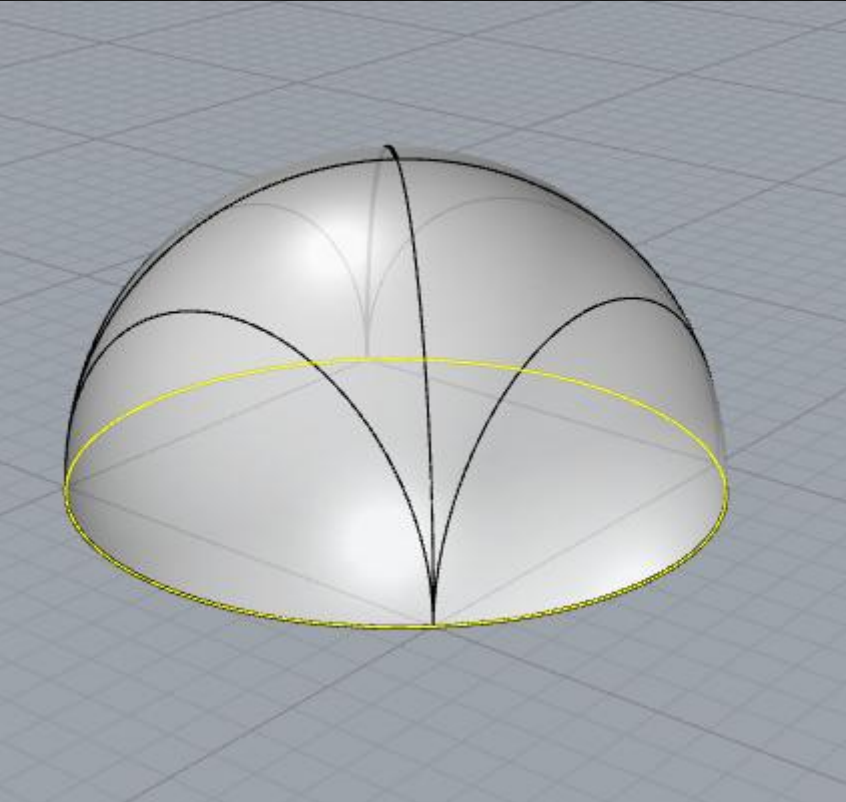
→ comando: Arc (3Pt)



Passo 5:

Repete os arcos na direção perpendicular

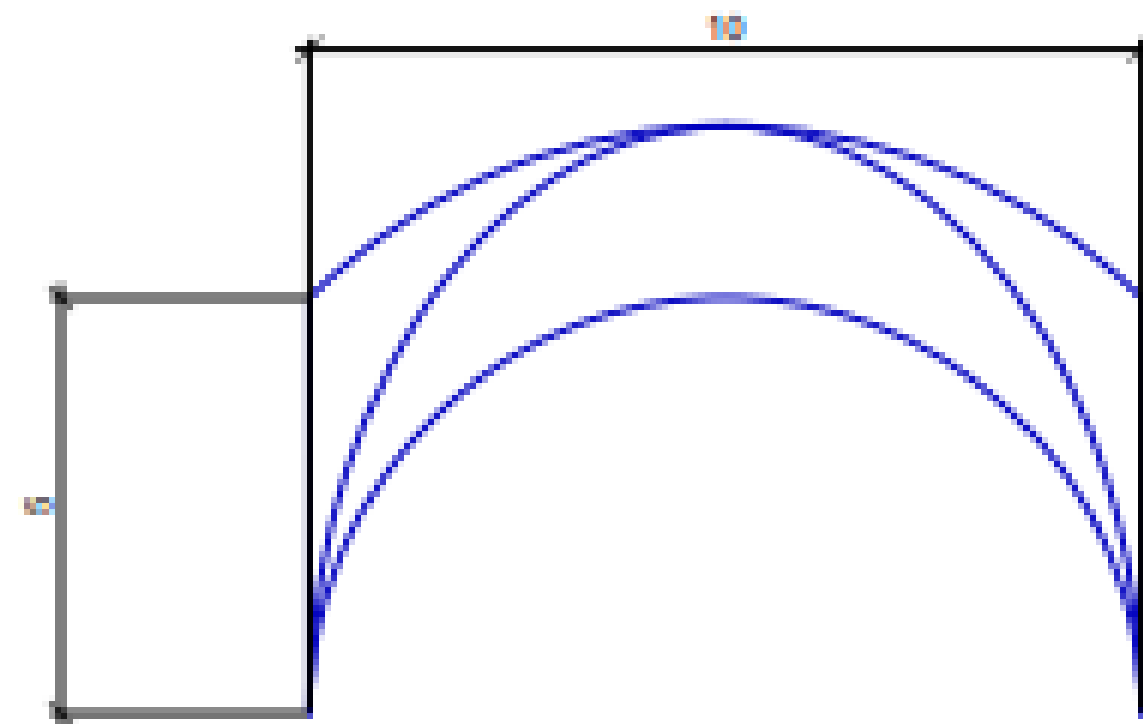
→ comando: Copy



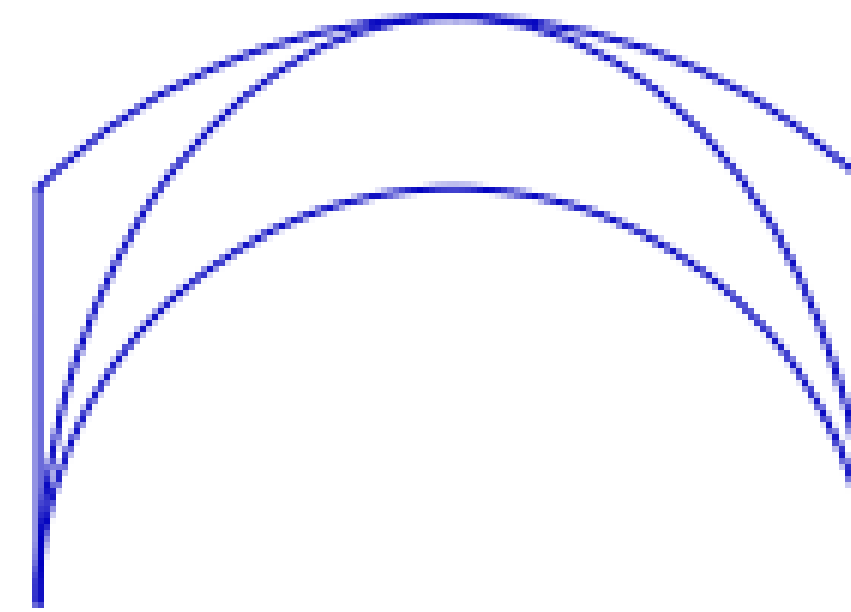
Passo Final:

A interseção de todos os arcos forma a lareja → superfície da abóbada

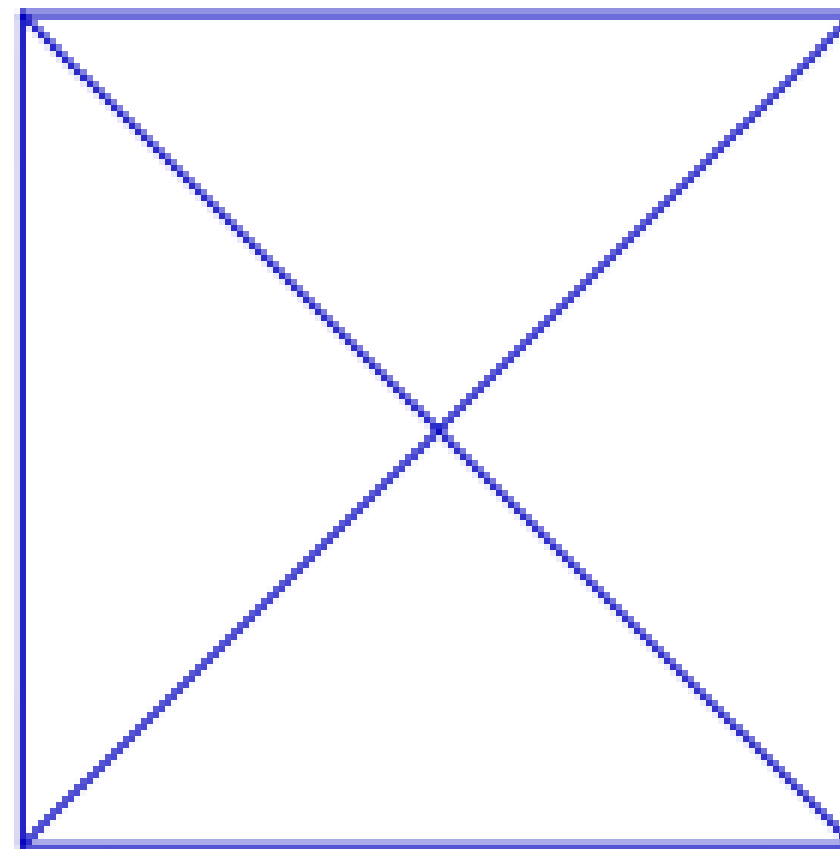
Abobada de Vela



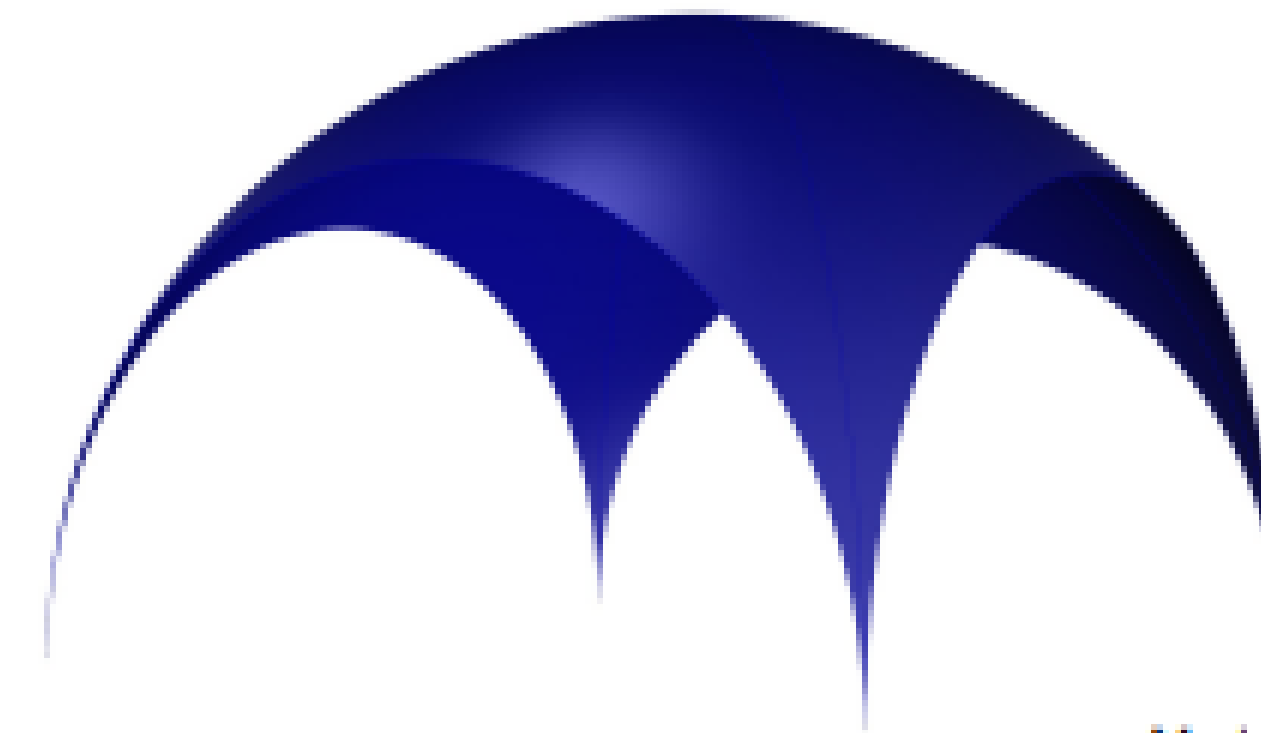
alcado Frontal
esc 1/2



alcado Lateral
esc 1/2

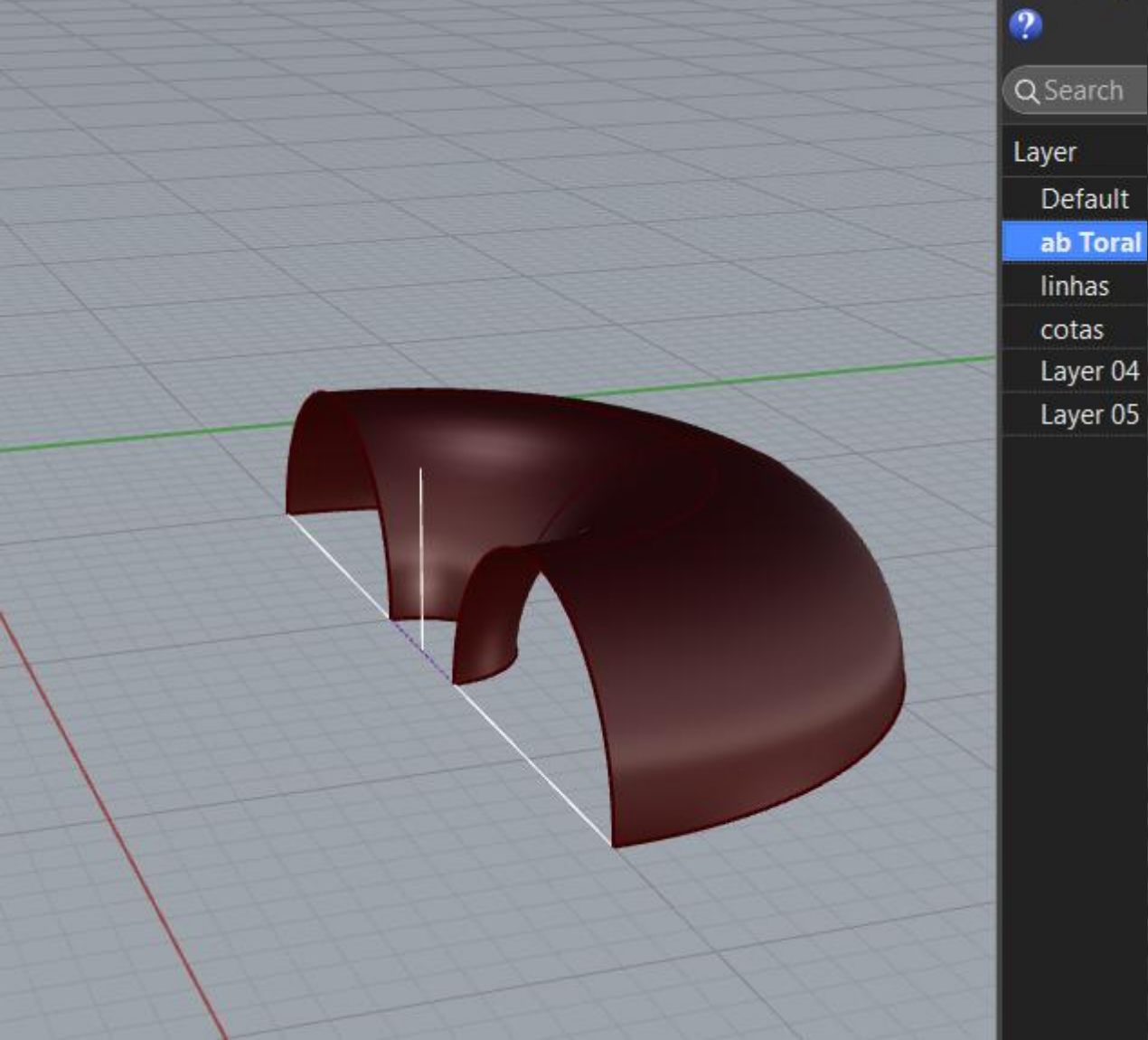
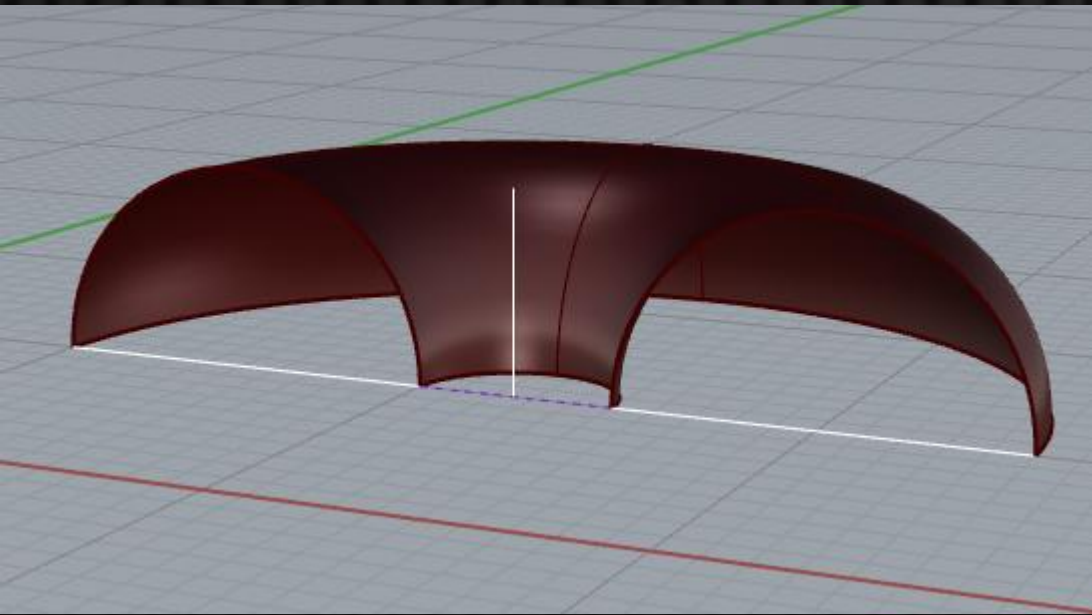
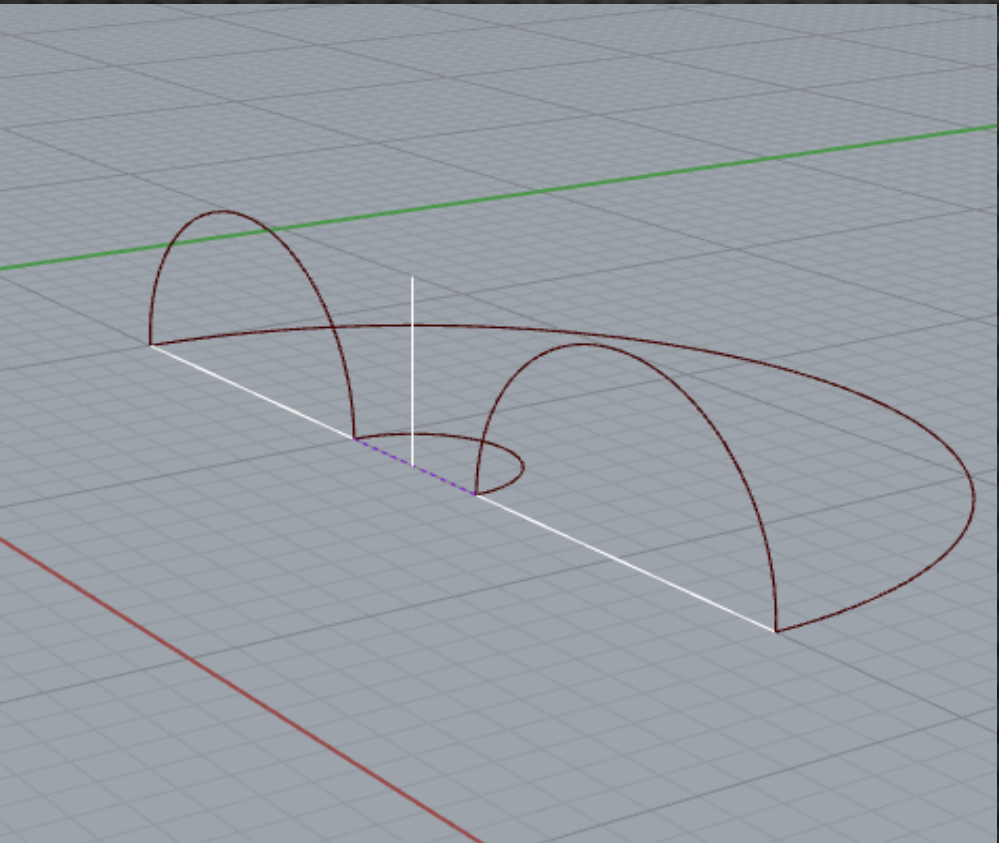
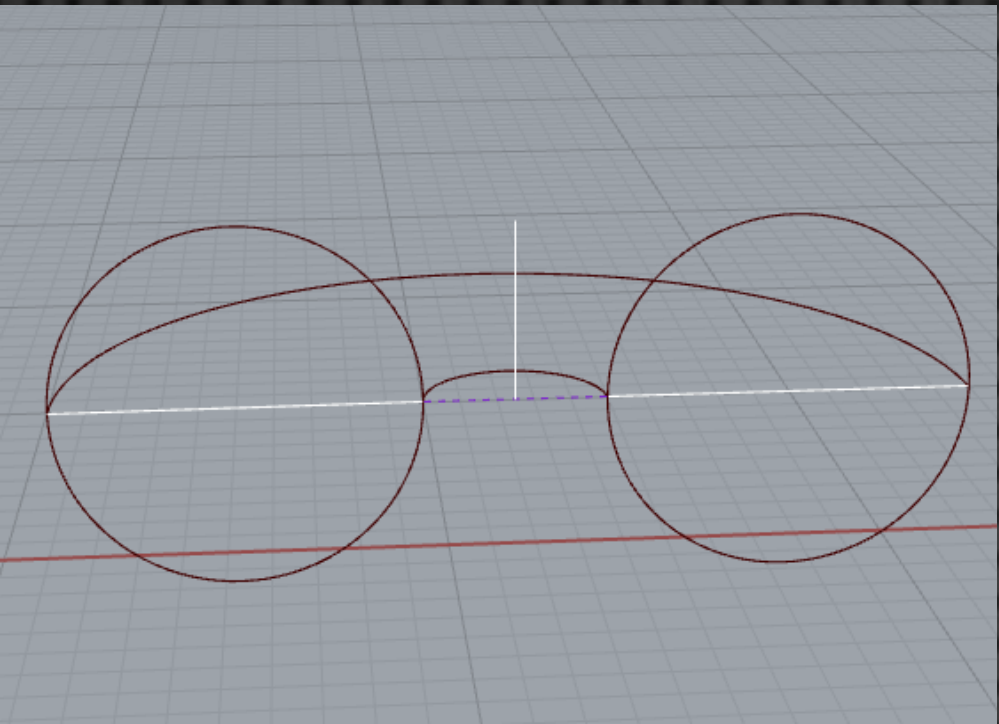
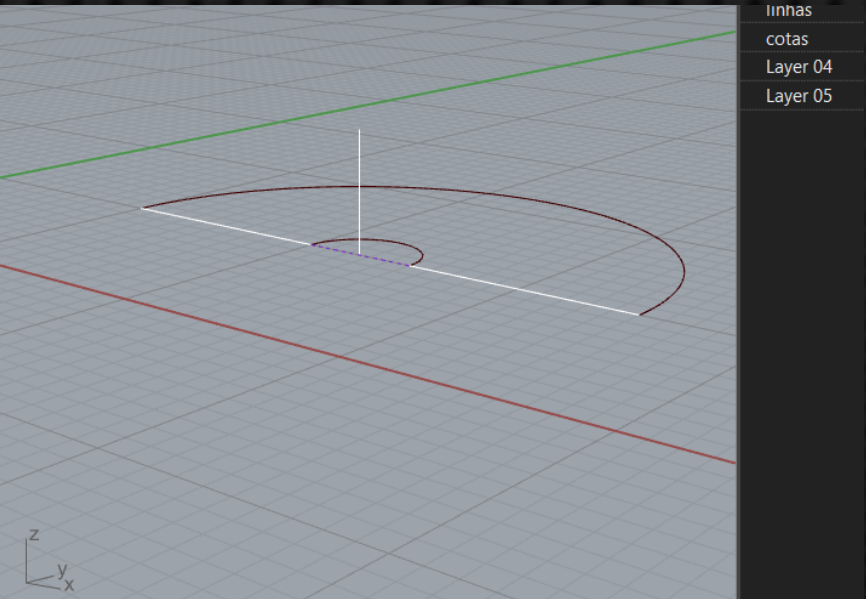
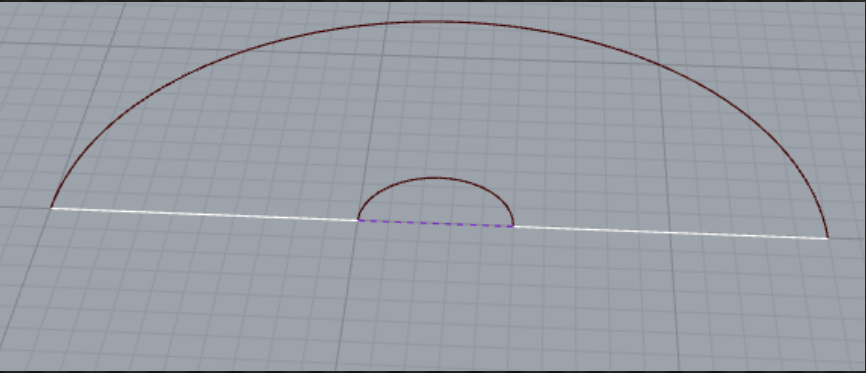
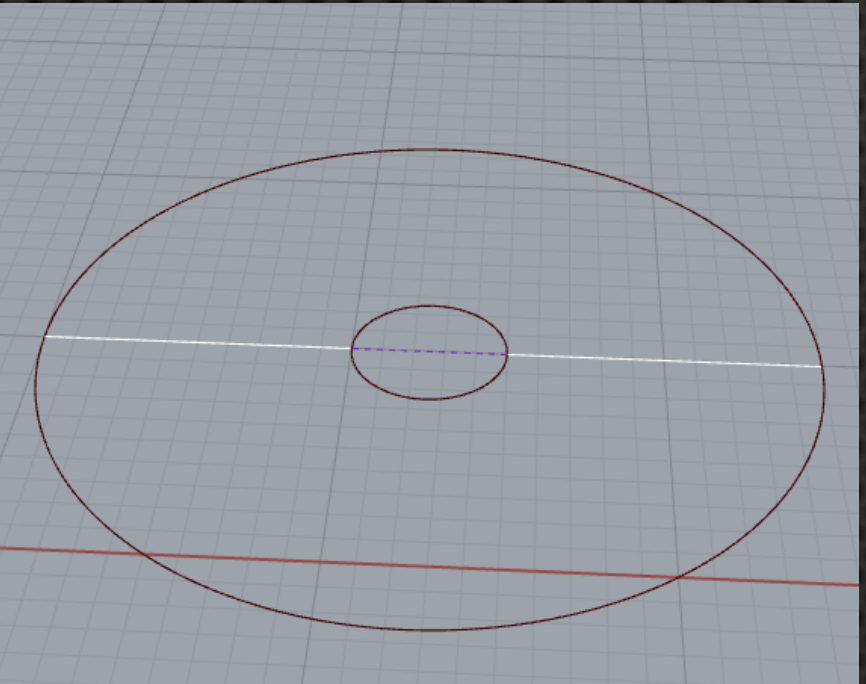
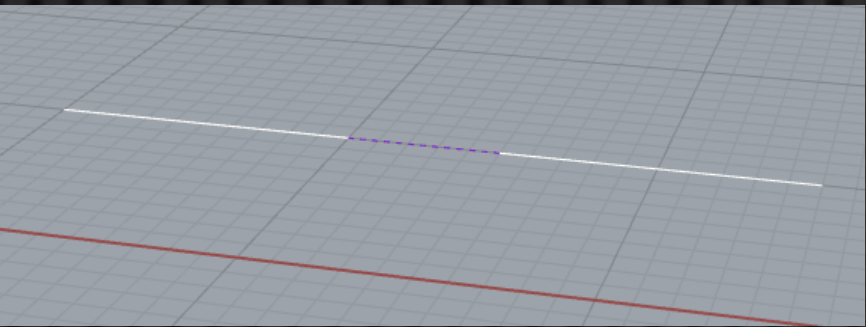


Planta
esc 1/2



Modelo

2.Abobada Toral



Passo 4: Corte das formas

Corta as circunferências para ficar só com os arcos necessários
ficas com:

- 2 arcos laterais
- 1 arco central

Comando: Trim

Passo 5: Levantar os arcos (3D)

Eleva os arcos no espaço (ficam verticais)
agora tens:

- arco central vertical
- arcos laterais verticais

Comando: Move (eixo Z)

Passo 6: Definir direção da abóbada

Cria a curva base (aquela curva no chão que aparece na
imagem)

essa curva vai guiar o desenvolvimento da forma

Comando: Arc OU Curve

Passo 1: Base elíptica (planta)

Desenha uma **elipse grande** (base da abóbada)
e uma **elipse pequena no centro** (vazio/interior)
isto define o limite exterior e interior

Comando: Ellipse

Passo 2: Arcos laterais (secções)

Desenha **duas circunferências laterais iguais** (uma de cada lado)
estas circunferências vão definir as curvaturas laterais

Comando: Circle

Passo 3: Arco central (toral)

No meio, desenha um **arco mais pequeno** entre as duas circunferências
este é o verdadeiro **arco toral** (secção principal)

Comando: Arc

Passo 7: Gerar a superfície

Liga:

- arco central
 - arcos laterais
 - curva base
- aqui ele cria a superfície da abóbada toral (tipo varrimento)

Comando:

- Sweep1 (mais provável)

OU

- Sweep2

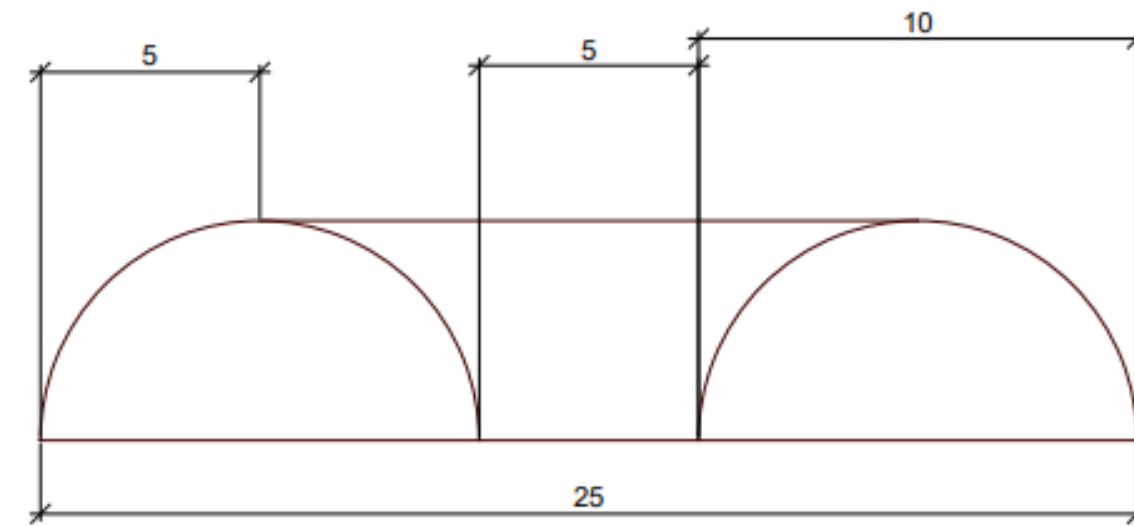
Passo Final: Ajustes

Limpa e suaviza a forma final
obténs a abóbada toral completa

Comando:

- Trim
- Join

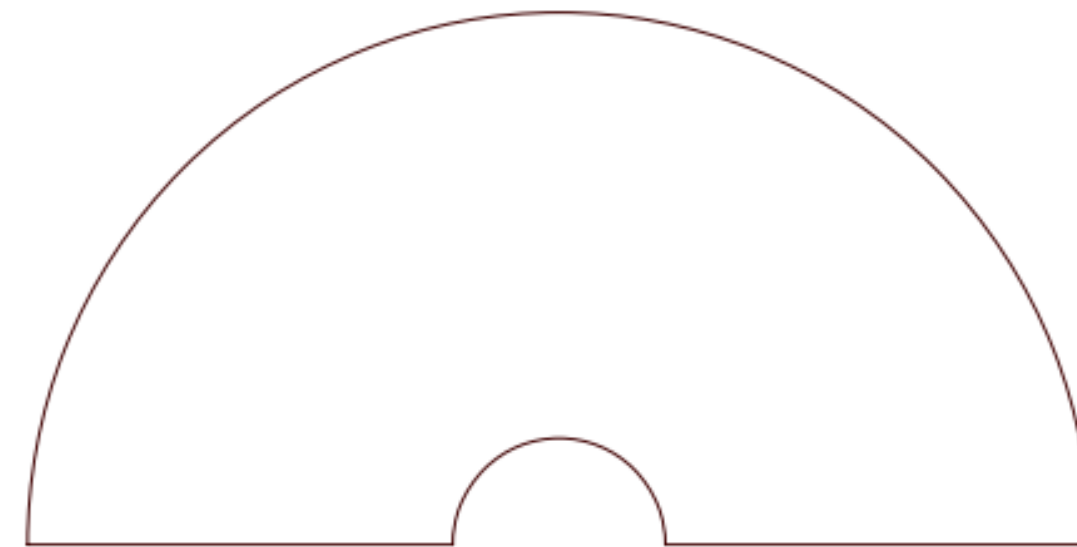
Abobada Toral



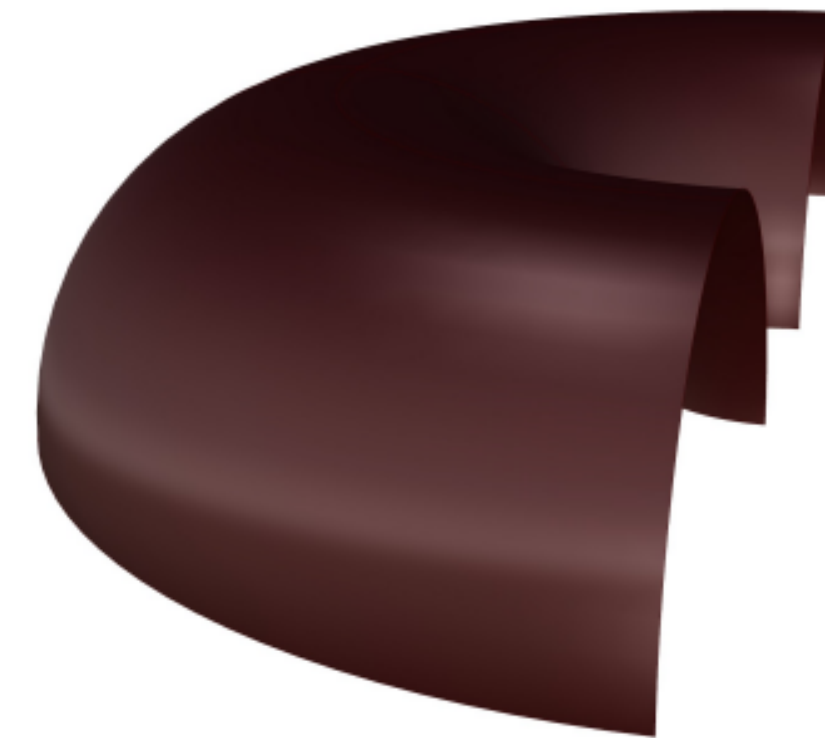
Alcado frontal
esc 1/2



Alcado Lateral
esc 1/2

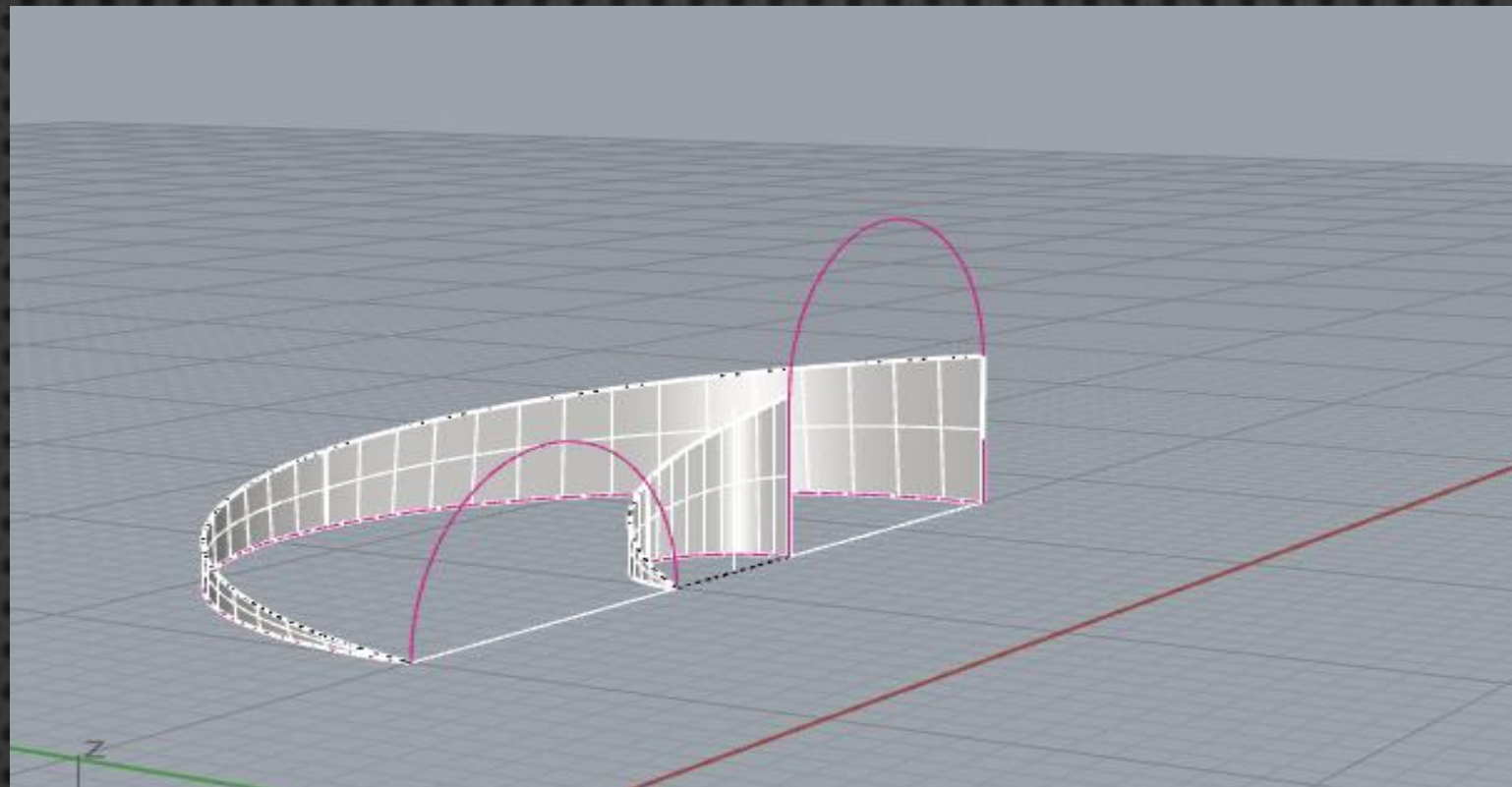
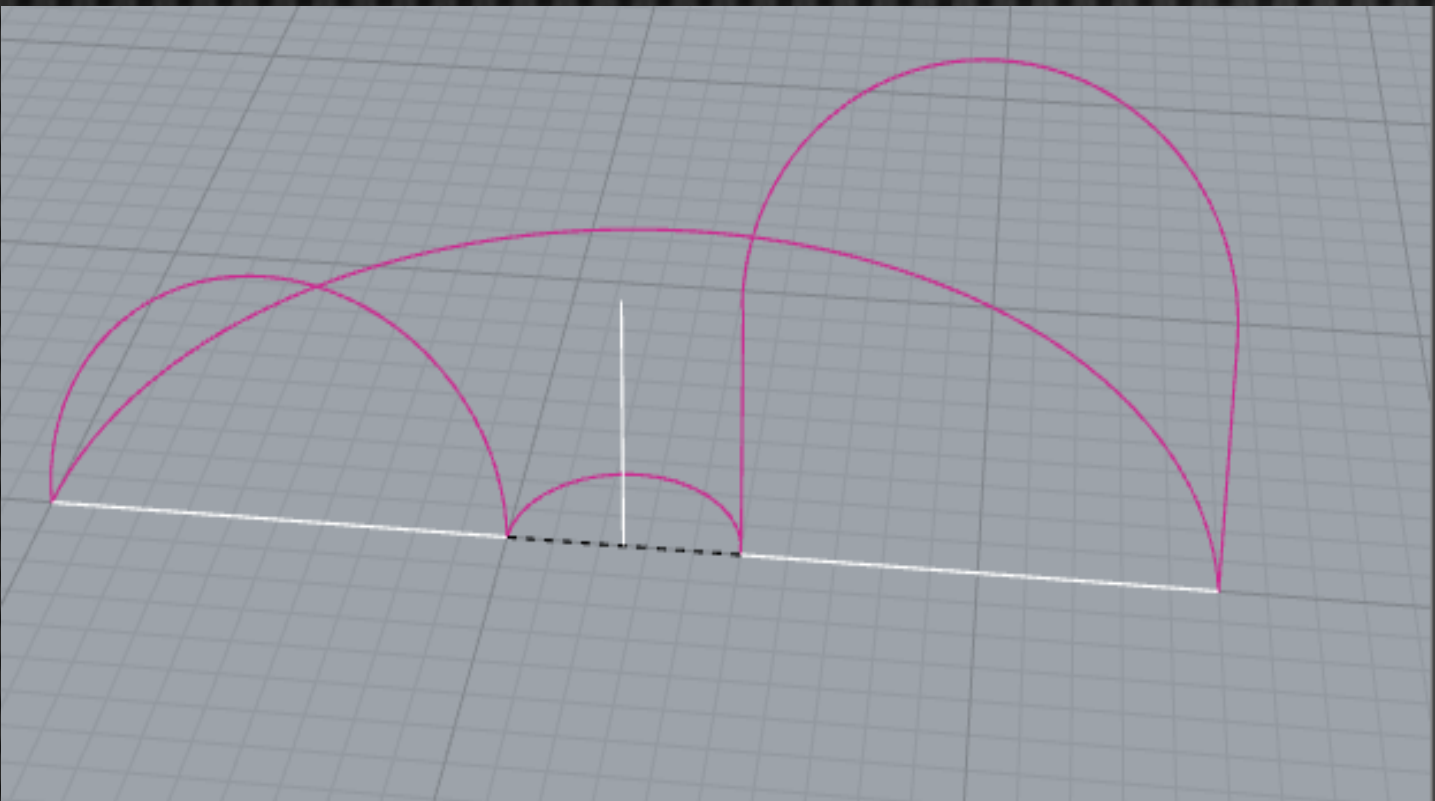


Planta
esc 1/2



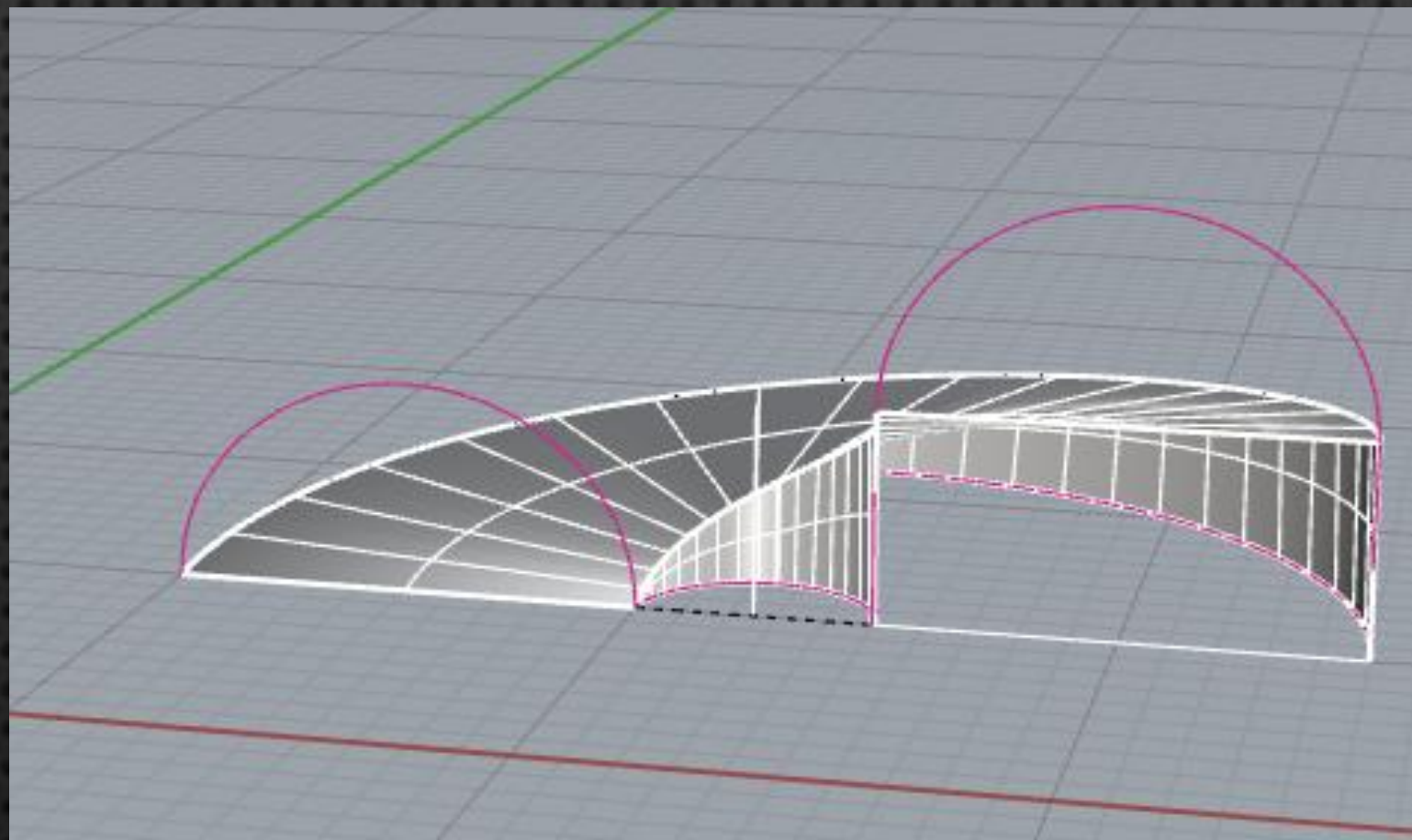
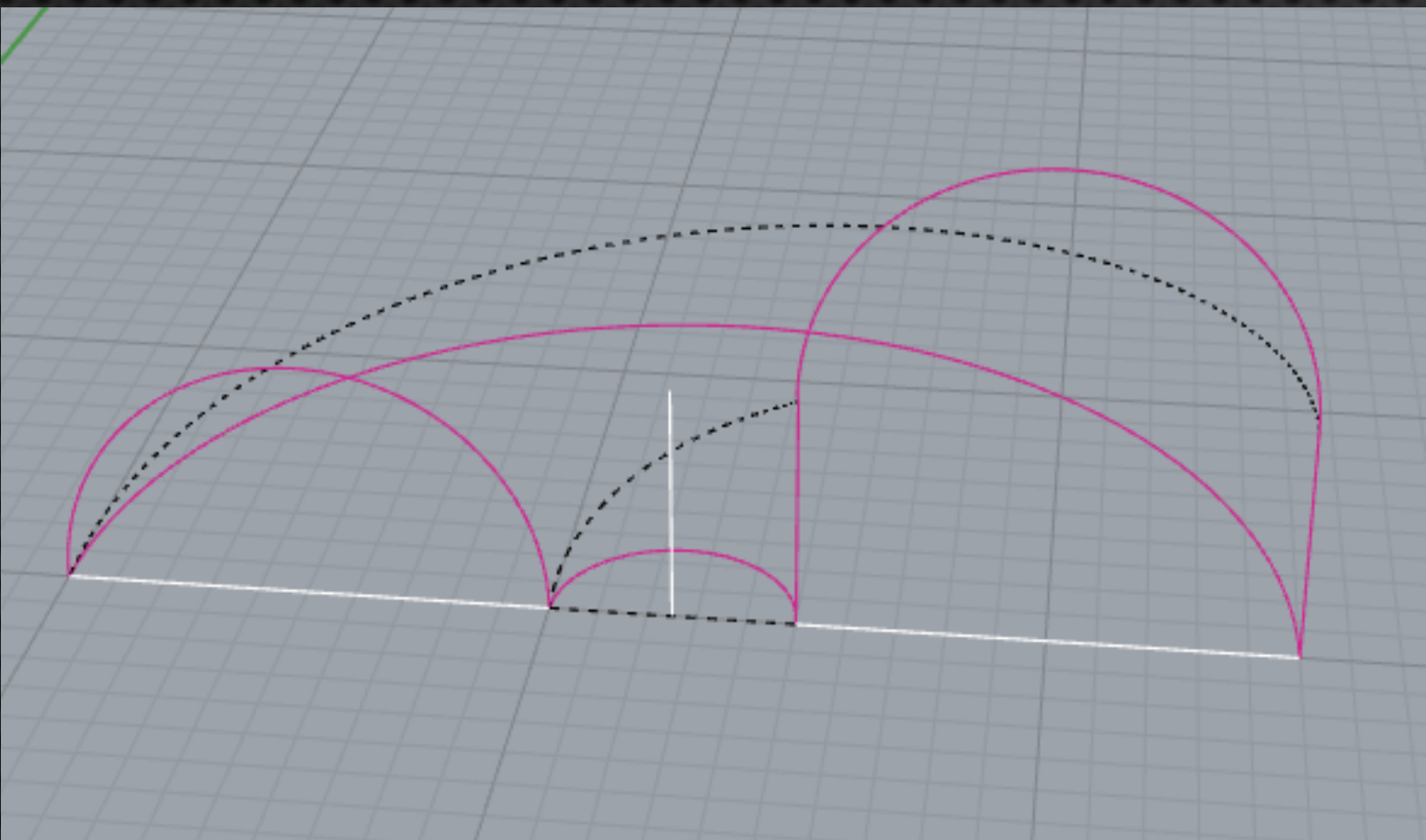
Modelo

3. Abobada de sao giles



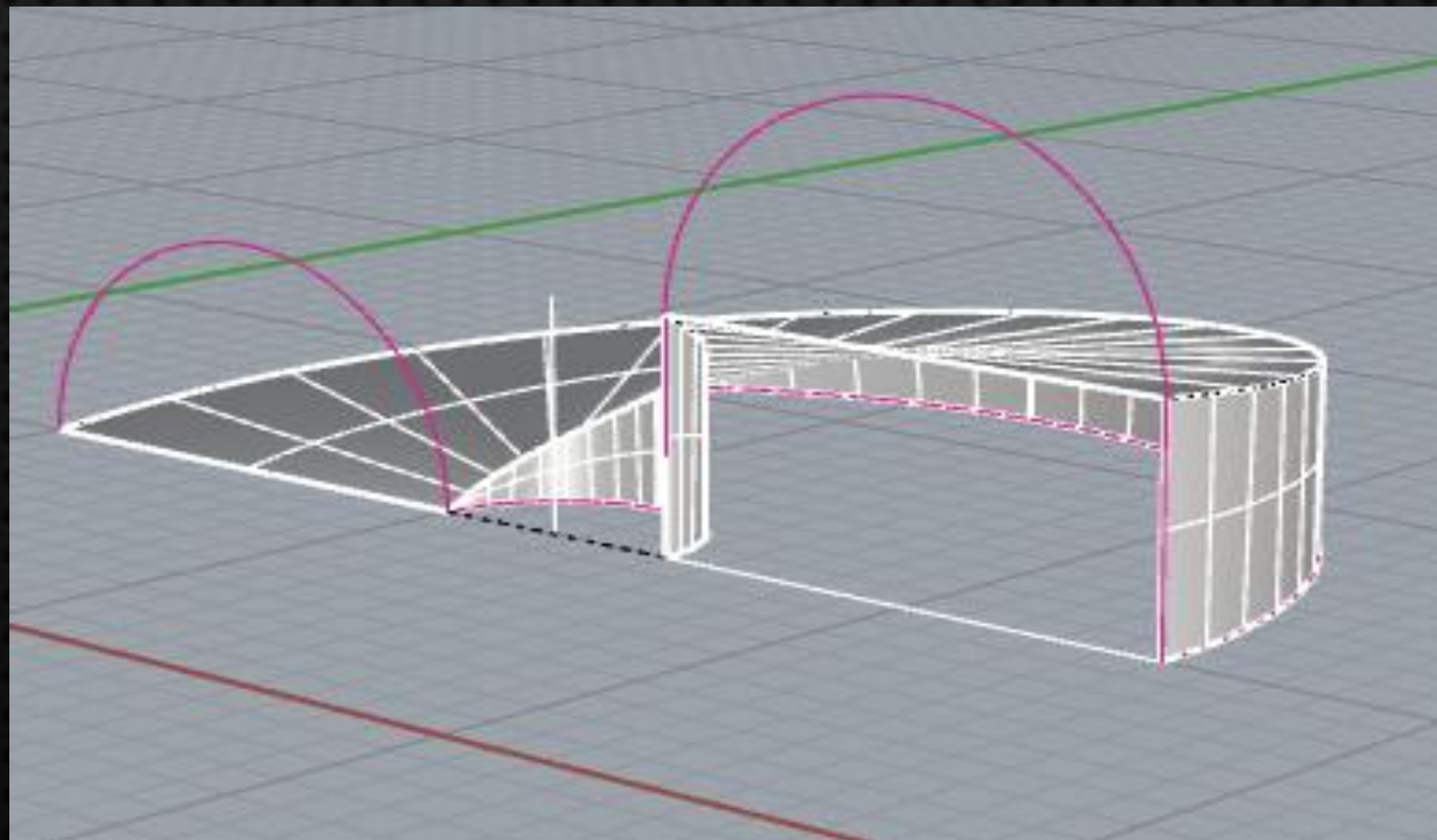
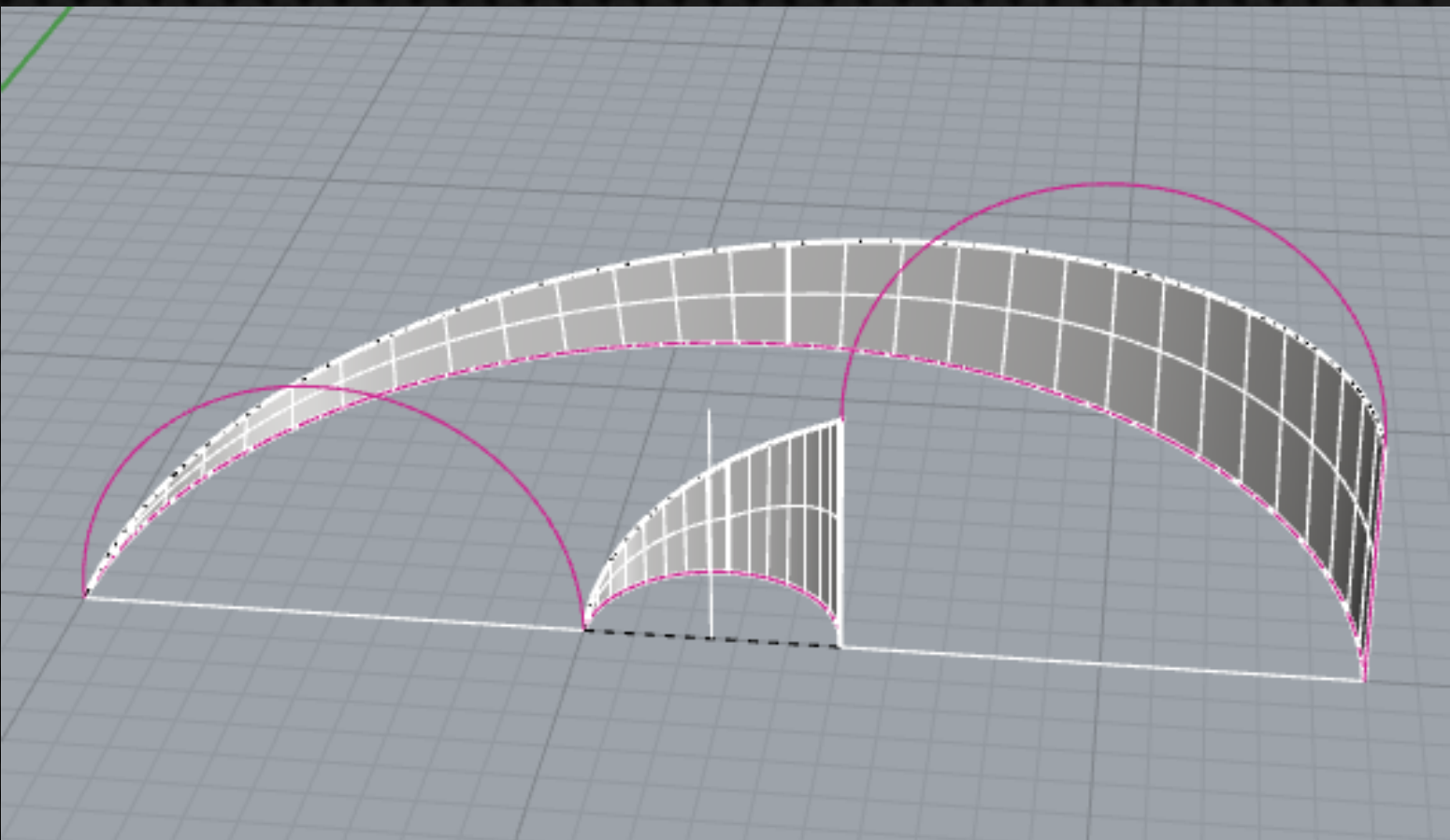
1. Desenhar os arcos base (perfil)

- Começa por desenhar **arcos em planta (vista frontal/lateral)**.
- Tens:
 - Um arco maior (principal)
 - Um ou dois arcos menores (laterais/interiores)
- Todos partem da mesma linha de base (chão).
Esses arcos vão definir a forma da abóbada.



2. Criar linhas verticais de referência

- A partir dos pontos importantes (extremos e centros dos arcos), desenha **linhas verticais**.
- Estas linhas ajudam a controlar a altura e a ligação entre curvas.

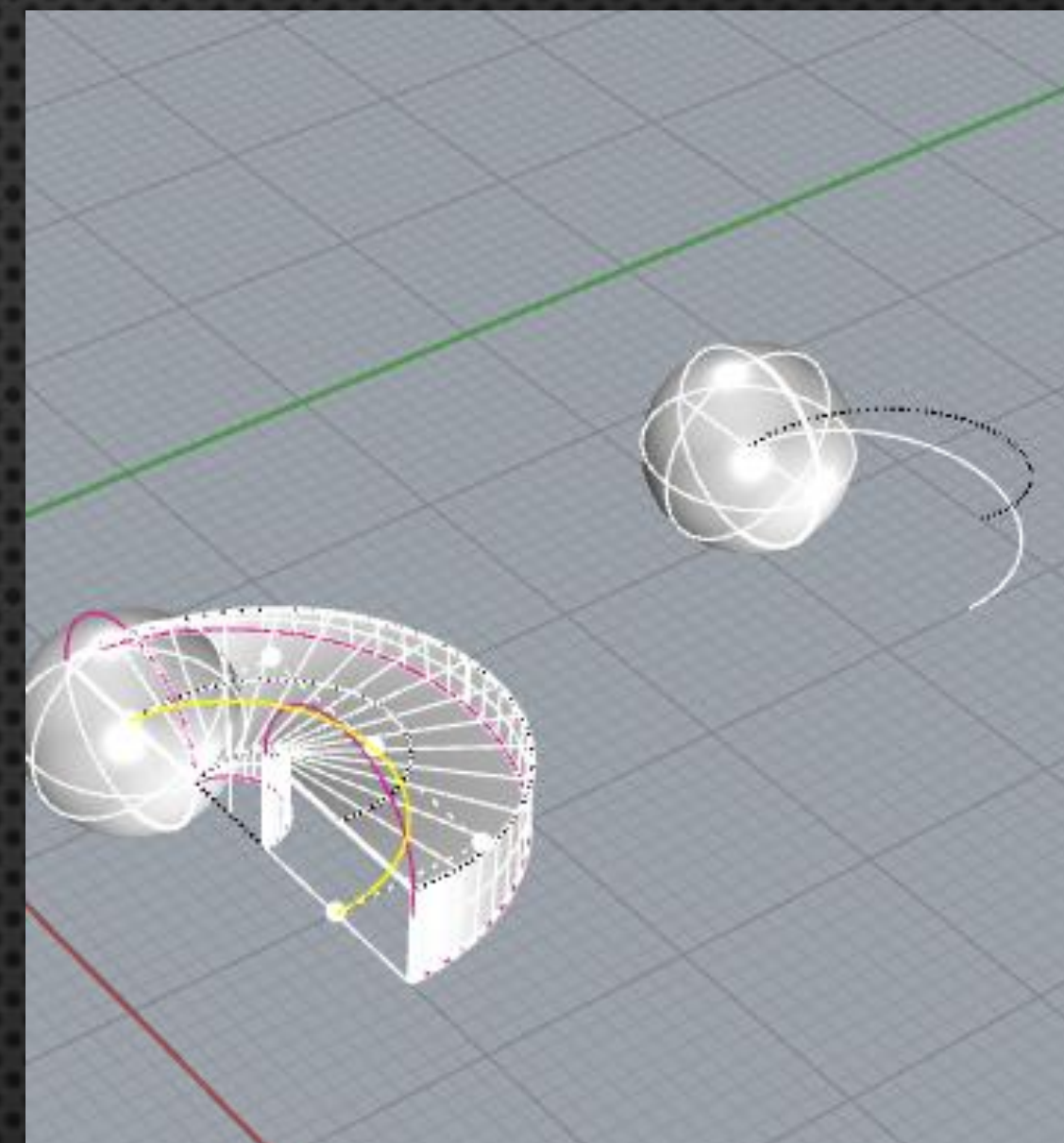
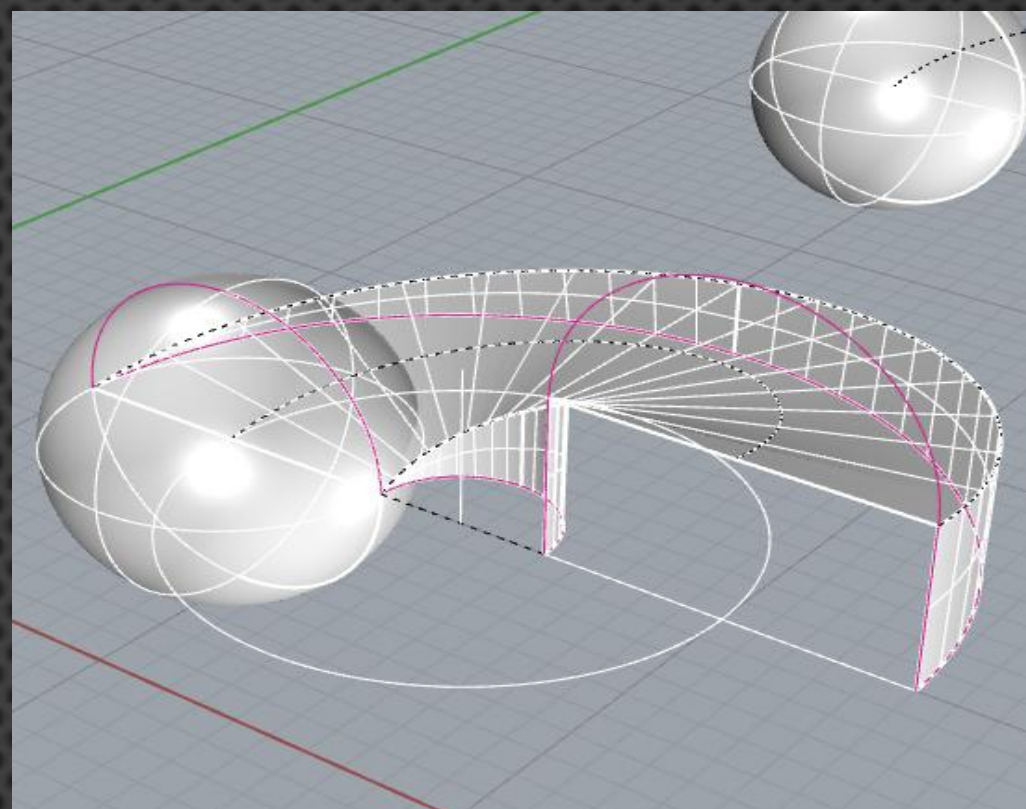
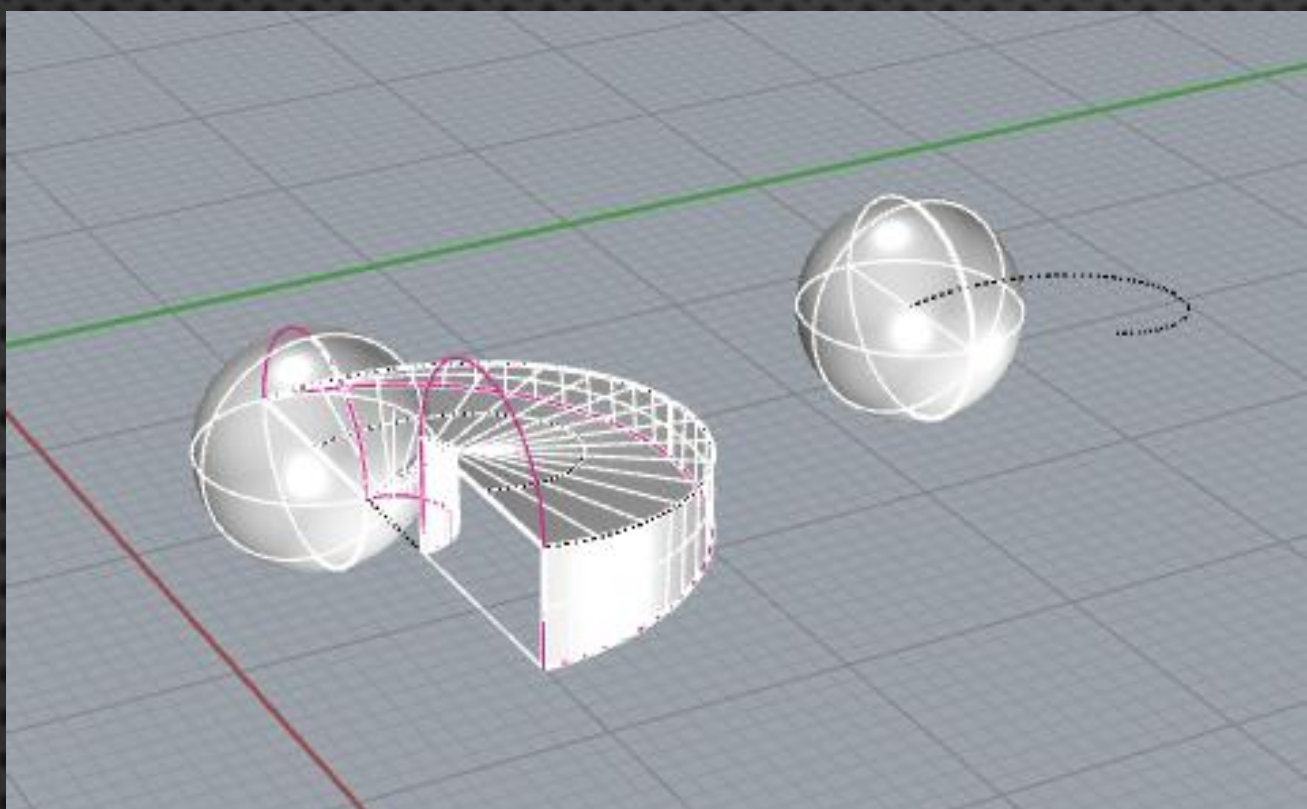
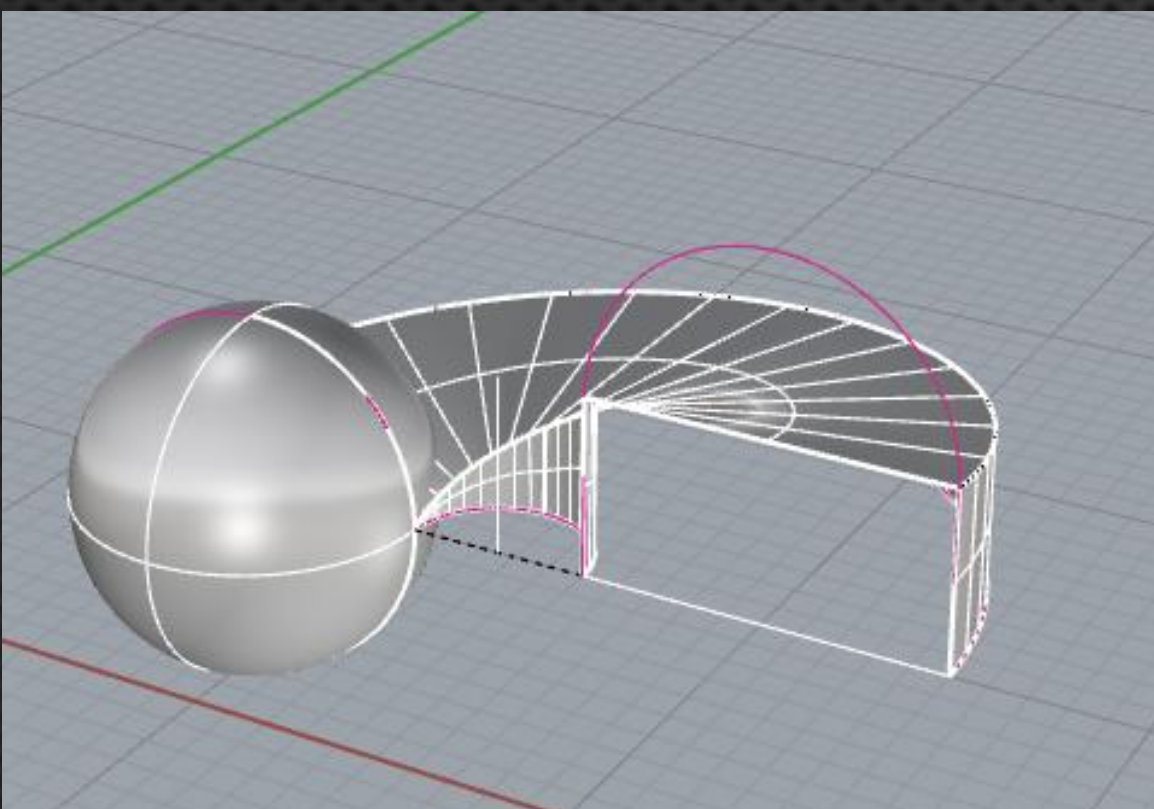


3. Projetar ou duplicar curvas para o espaço

- Copia ou projeta os arcos para criar **curvas em diferentes direções**.
- No exemplo, aparecem linhas tracejadas → são guias para formar a superfície.
Aqui estás basicamente a preparar uma “rede” de curvas.

4. Criar superfícies (Loft / Sweep)

- Usa comandos como:
 - **Loft** (entre arcos)
 - ou **Sweep2** (duas curvas guia + secções)
- Liga:
 - arco grande ↔ arco lateral
 - arco lateral ↔ arco central
- Isto começa a formar a “pele” da abóbada.

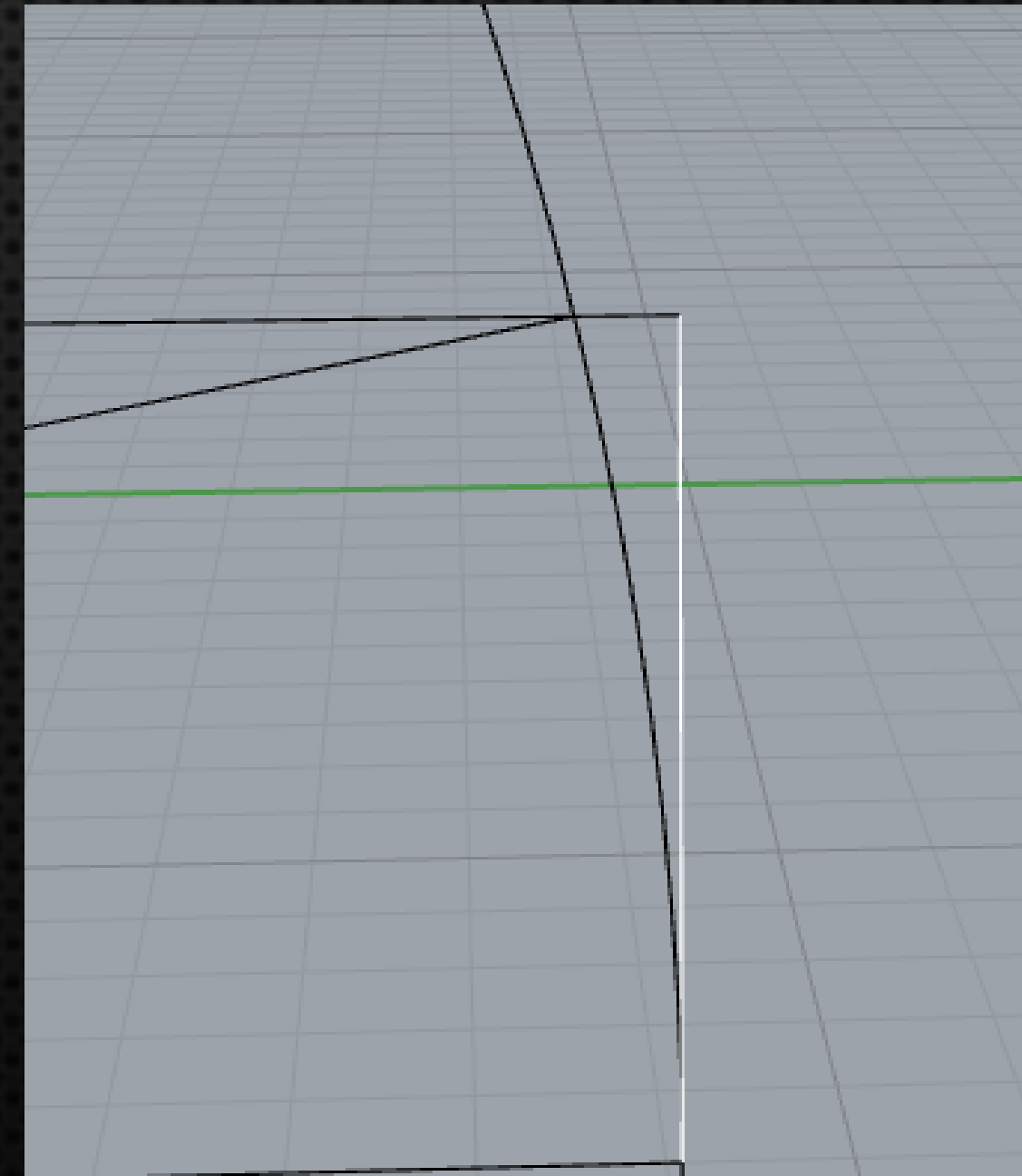
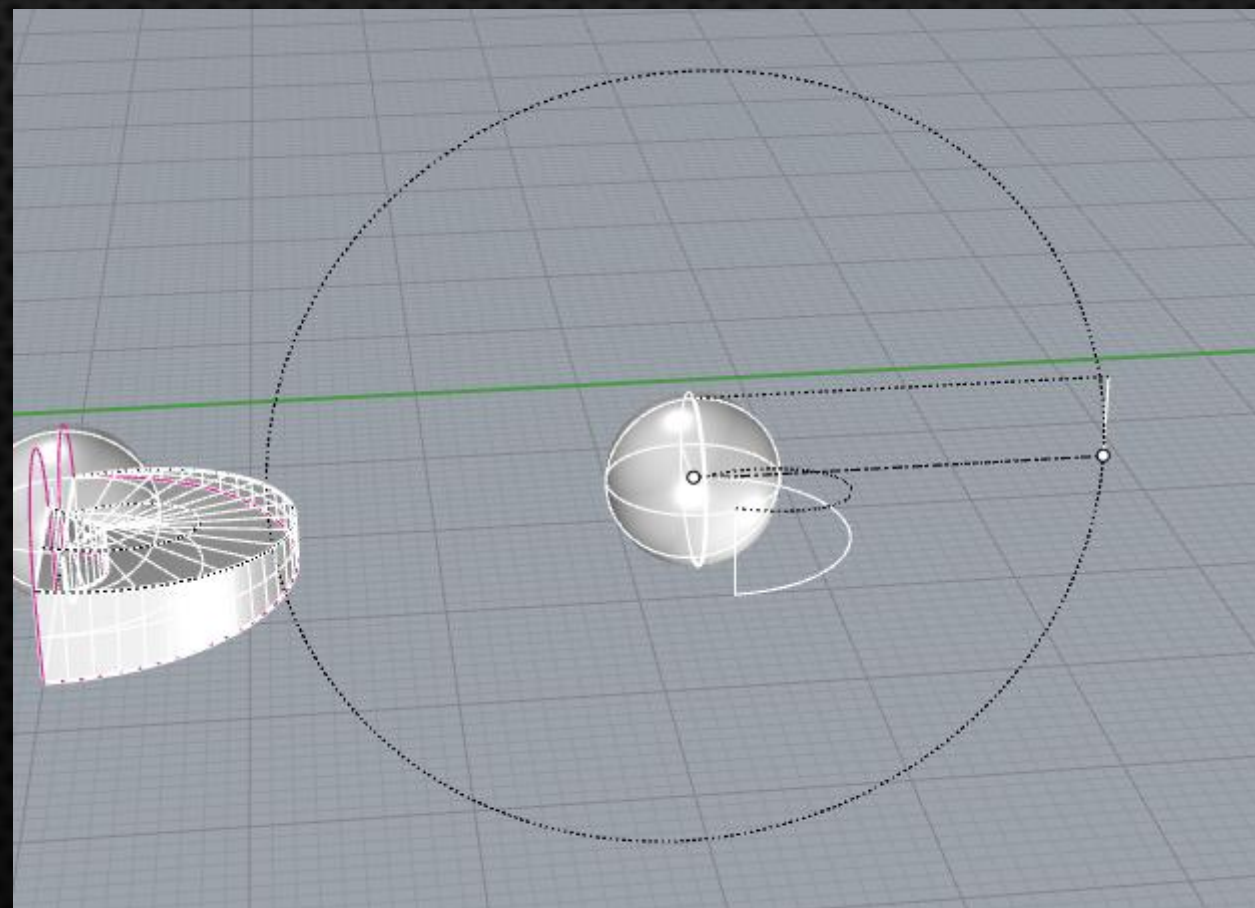
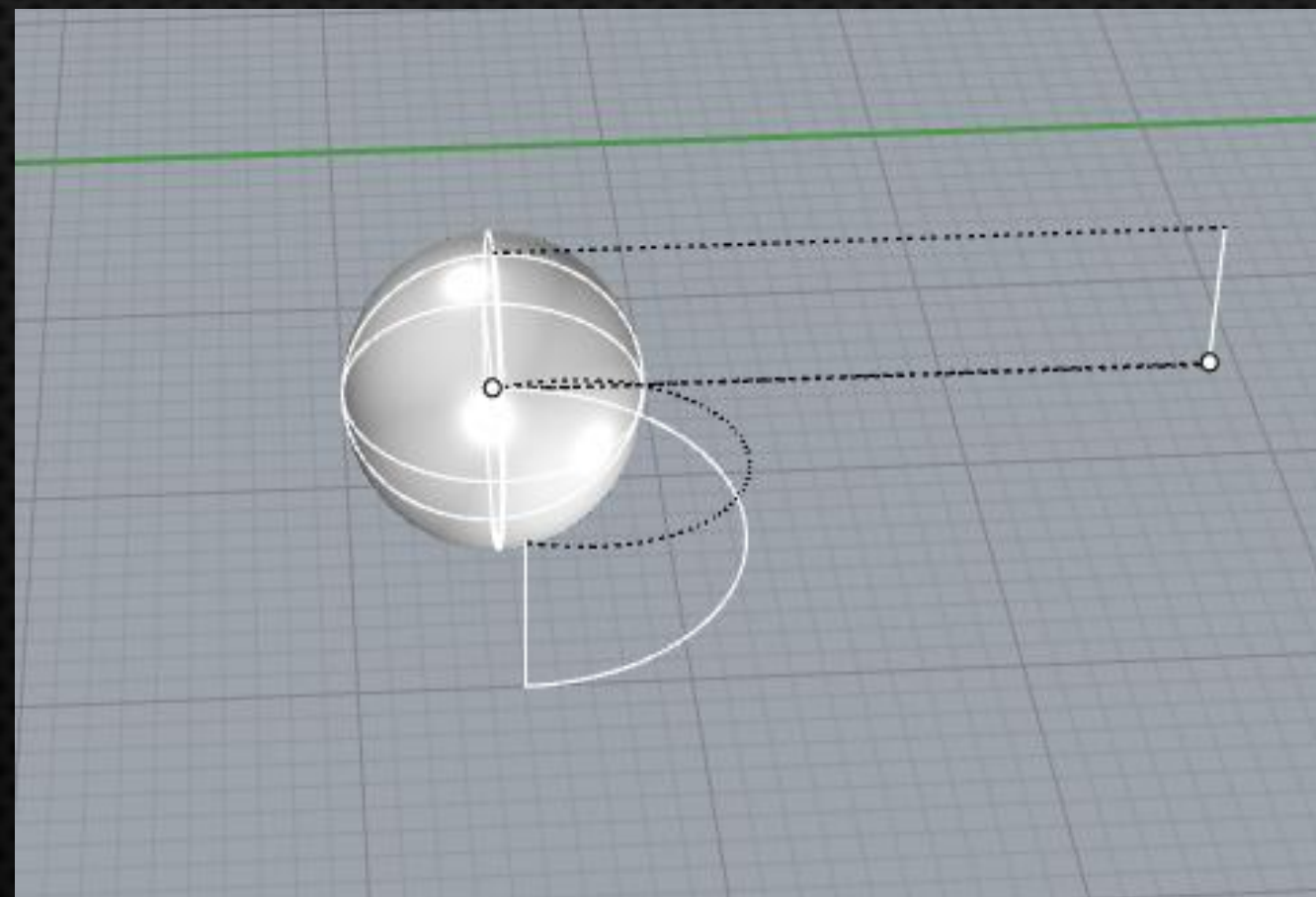
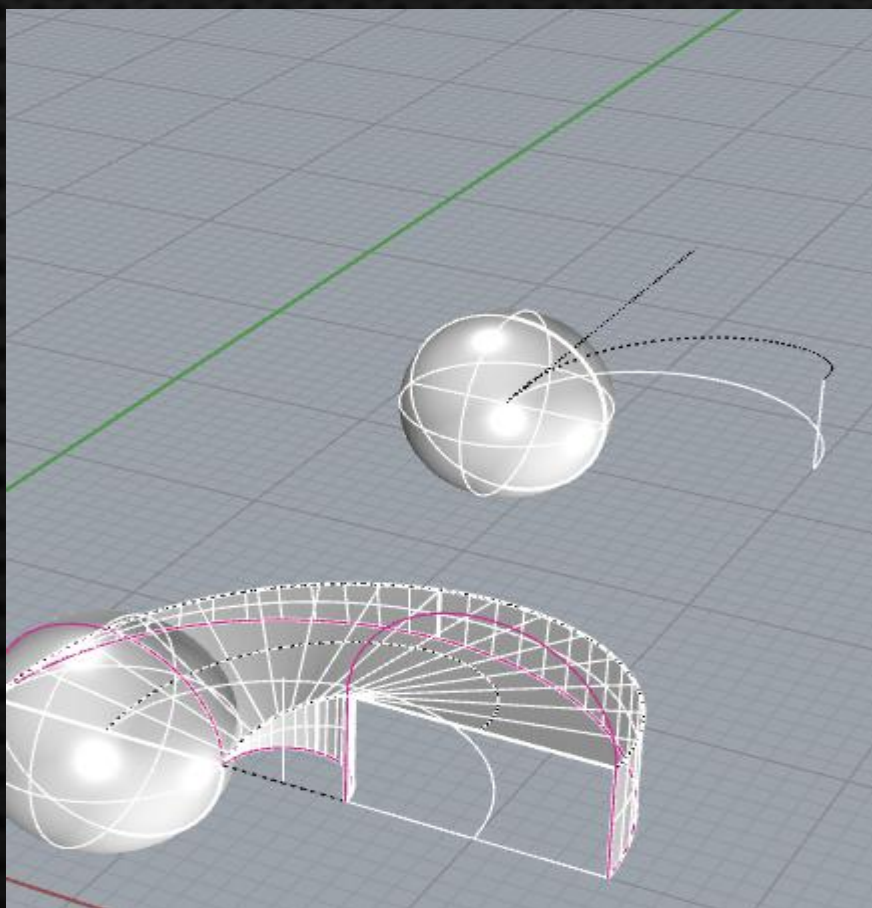


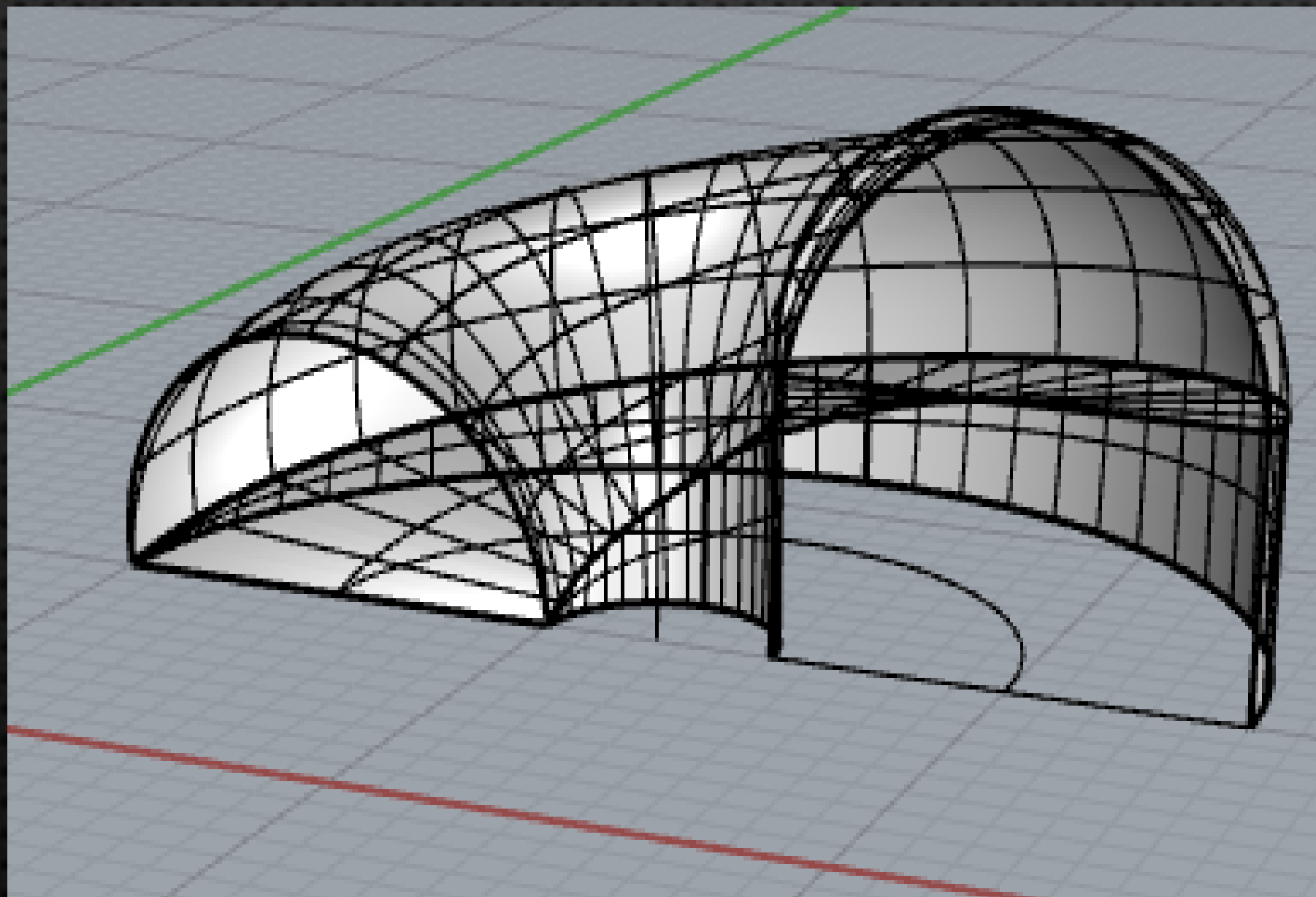
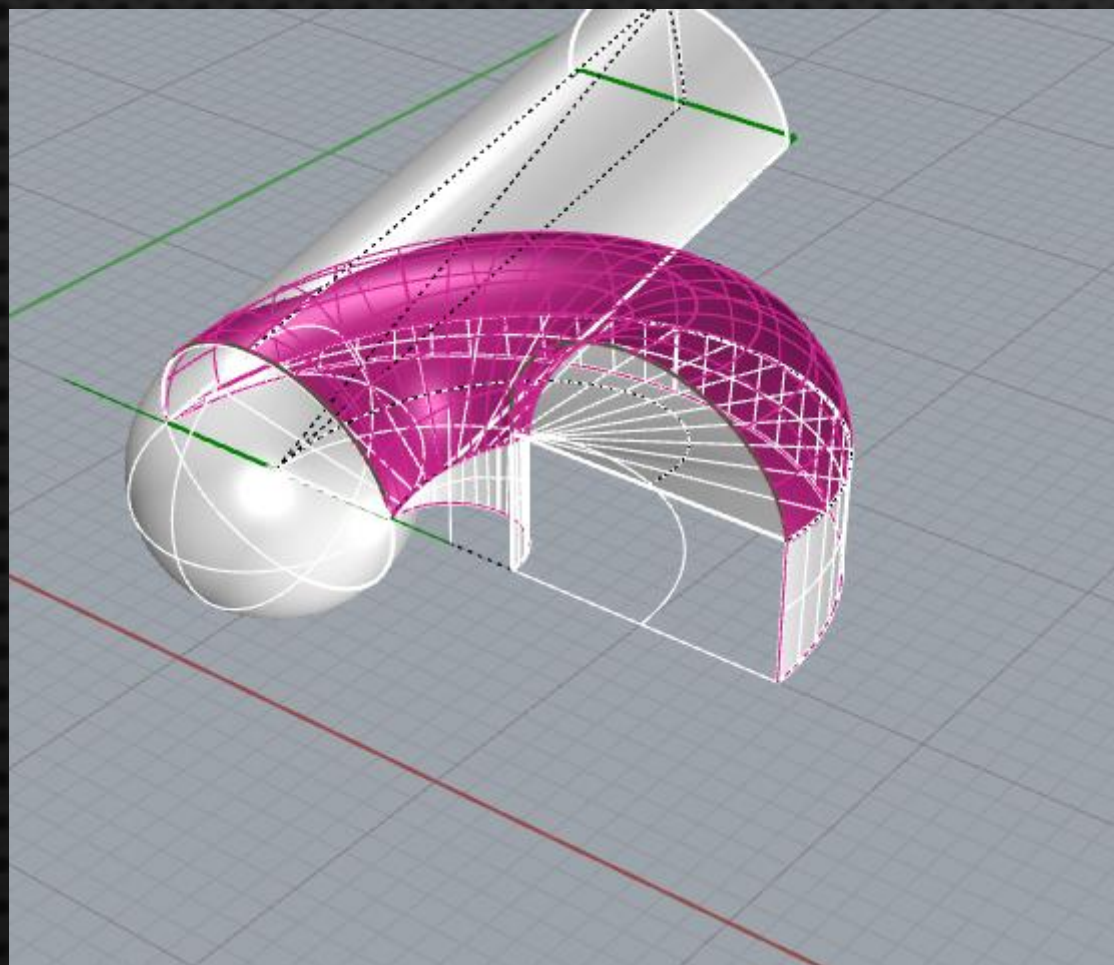
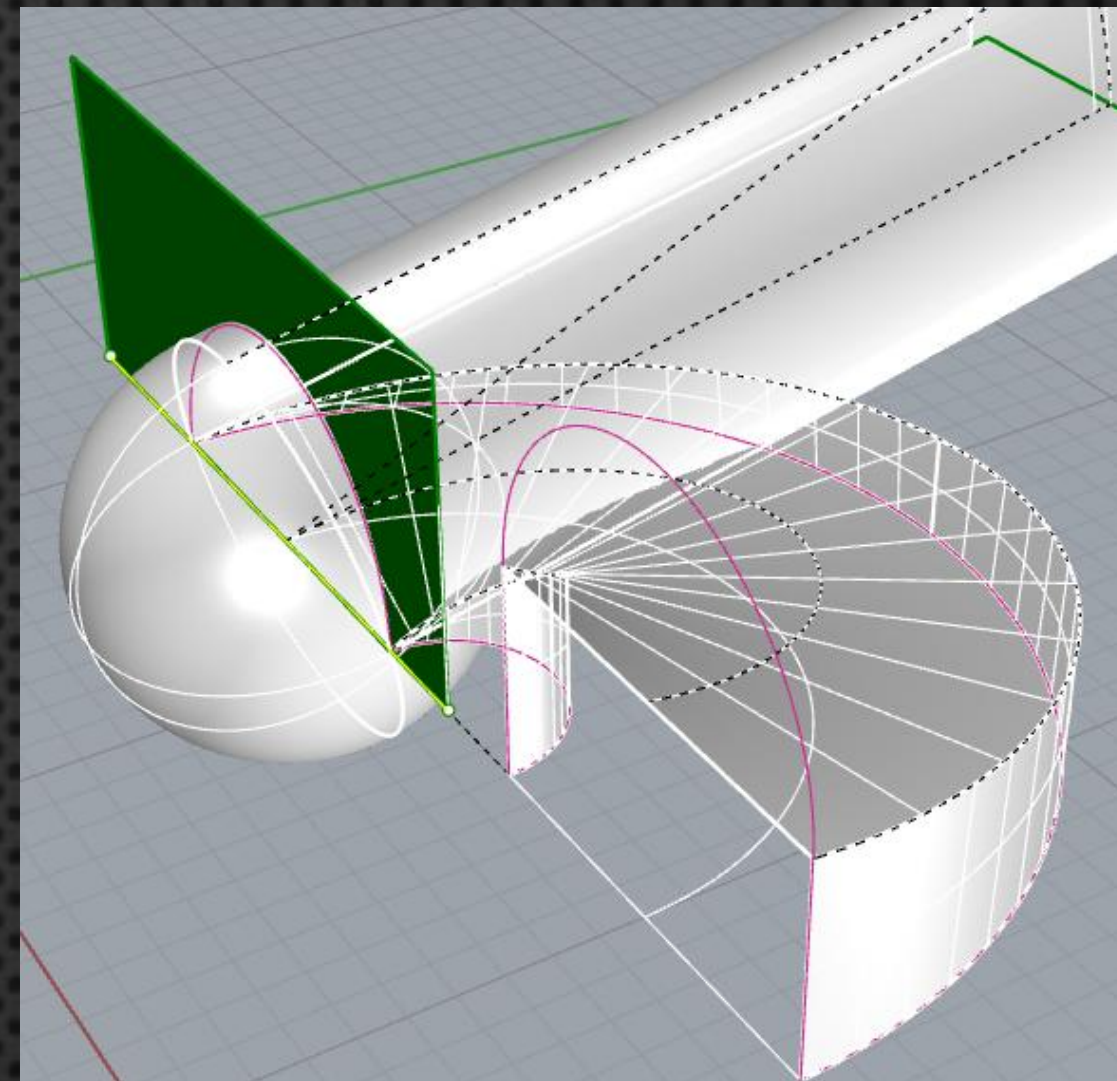
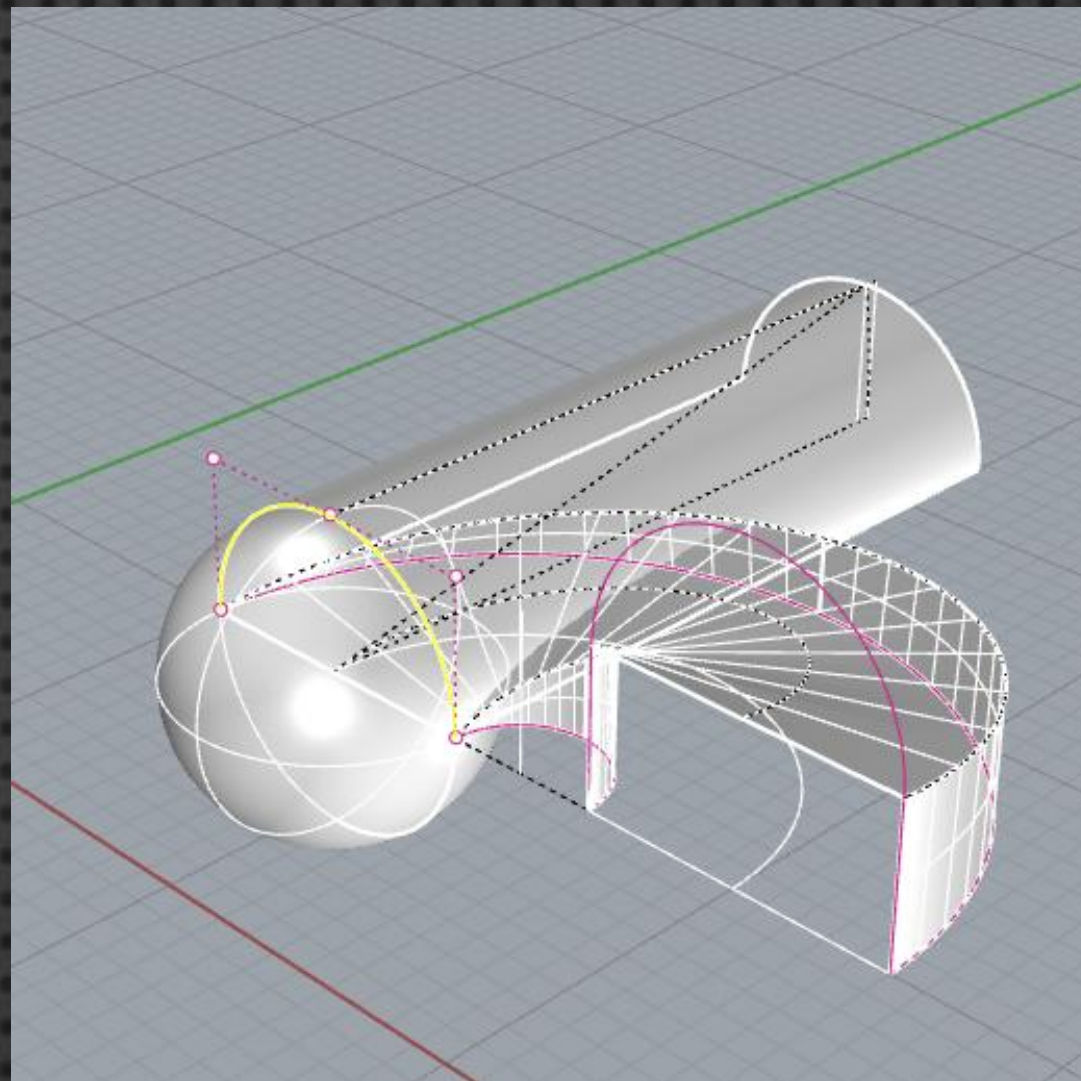
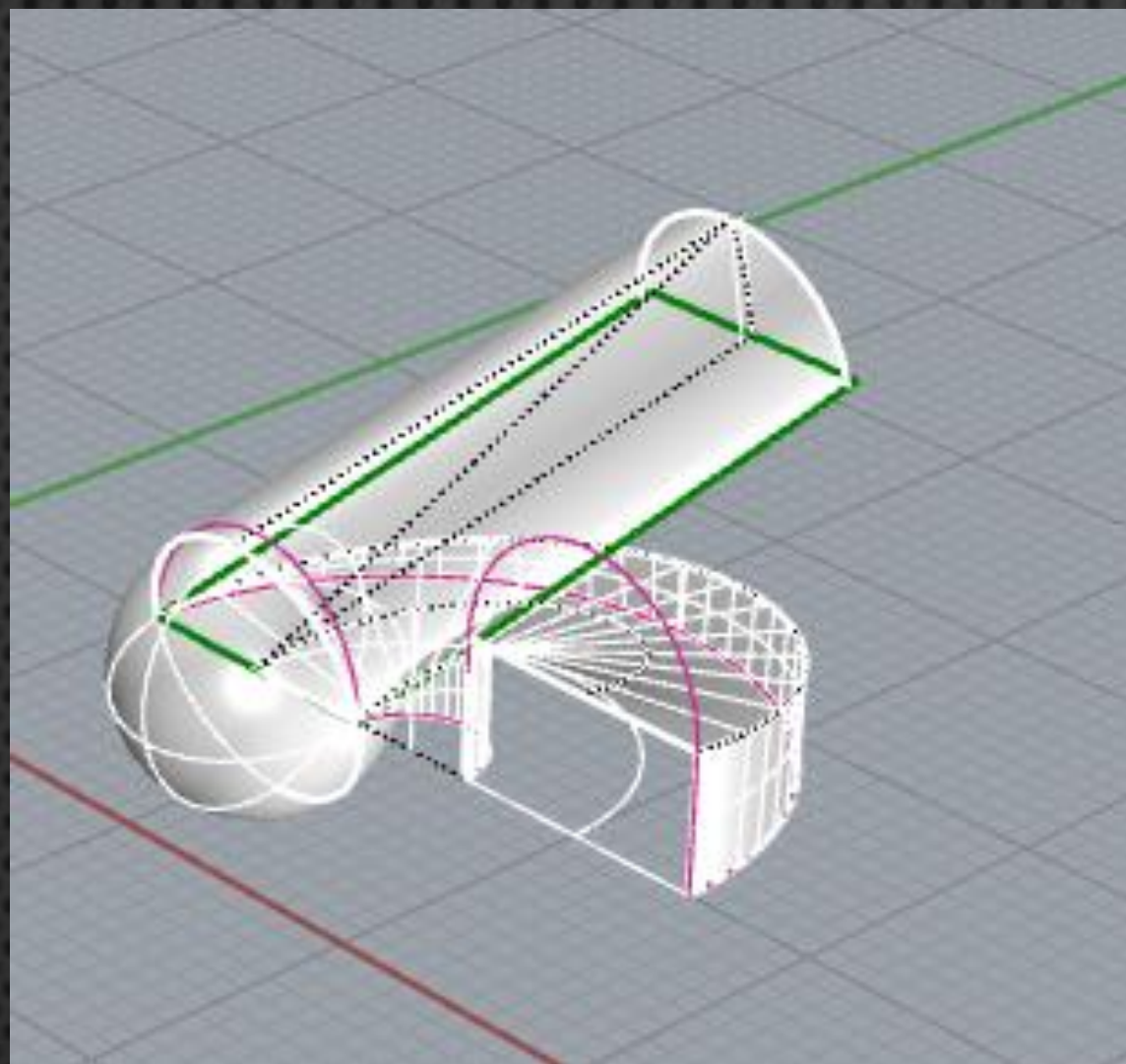
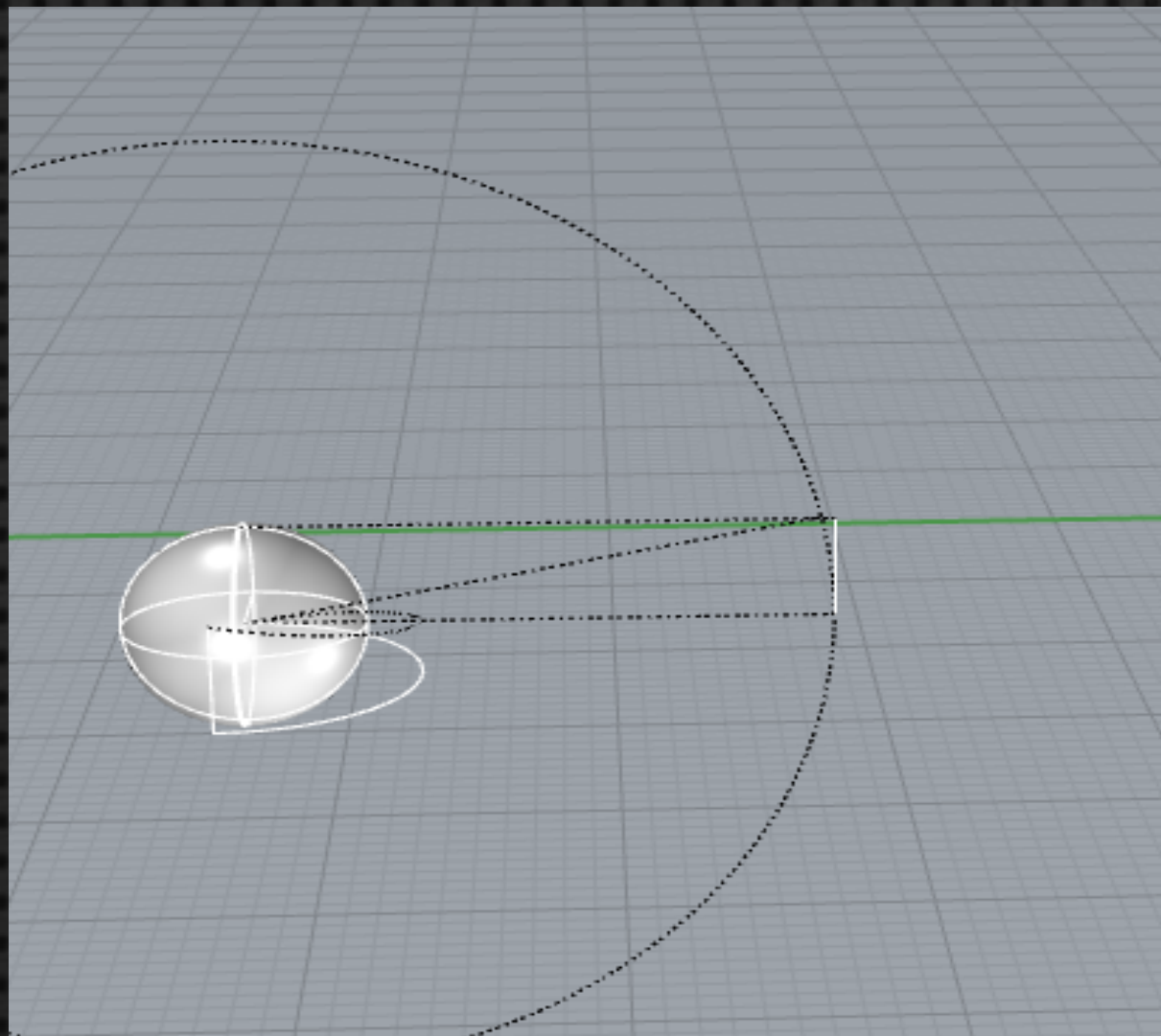
5. Gerar a malha (estrutura)

- Divide as superfícies (ex: Divide, Rebuild, OU Mesh).
- Isso cria aquelas linhas brancas tipo grelha.
- Serve para visualizar a geometria e estruturar melhor a forma.

6. Fechar laterais

- Cria superfícies verticais nas extremidades:
 - Usa **Extrude** ou **Planar Surface**
- Fecha as “paredes” laterais da abóbada.

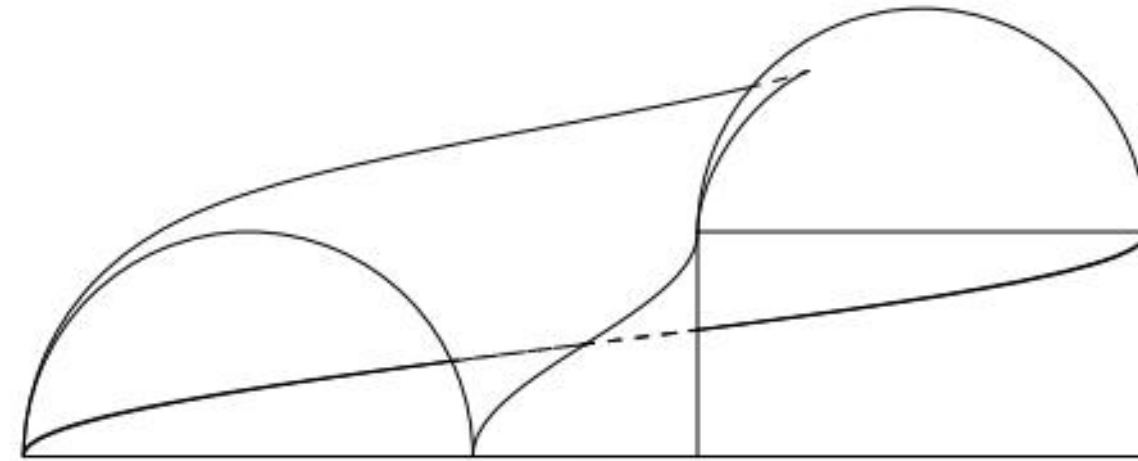




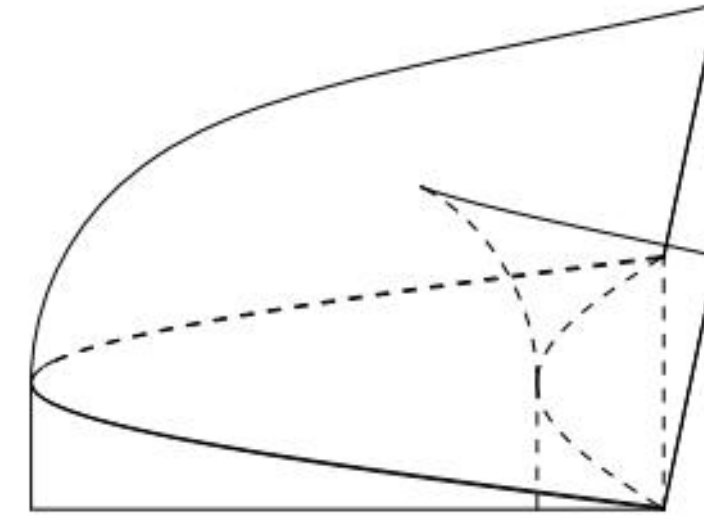
◆ 7. Ajustes finais

- Verifica:
 - continuidade das superfícies
 - suavidade (com MatchSrf OU Rebuild)
- Junta tudo (Join) para formar um volume único.

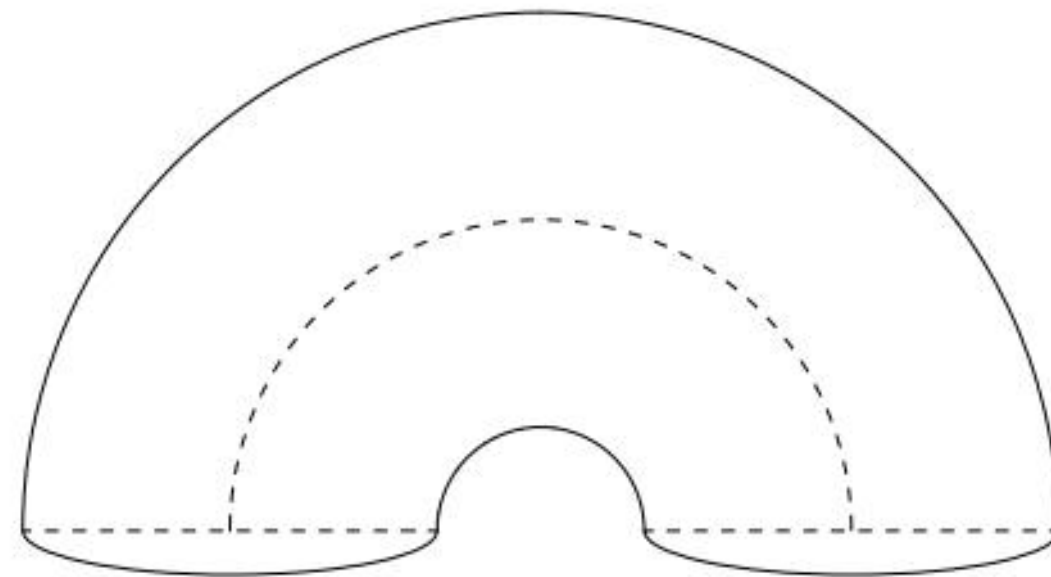
Abobada de Sao Gil



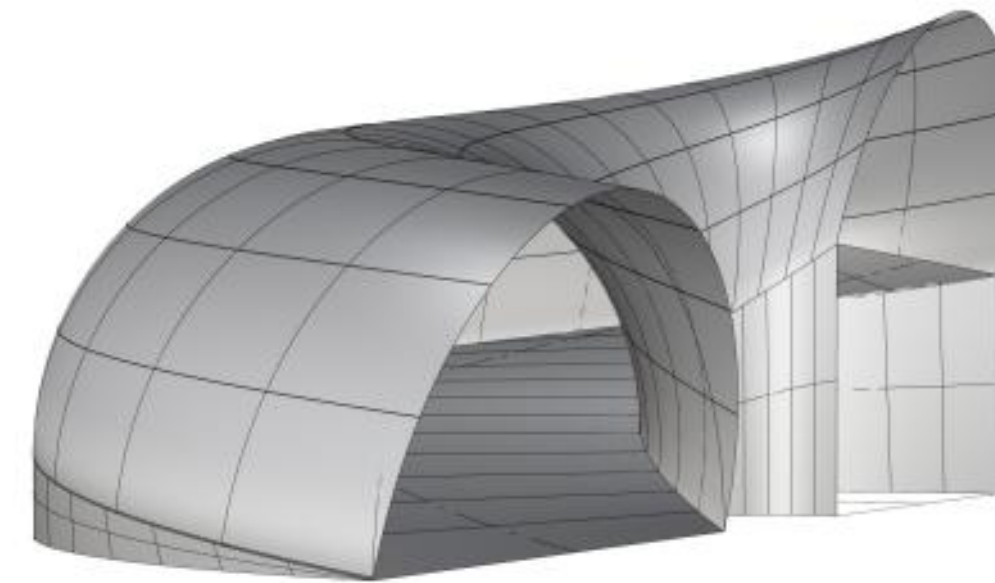
Alcado frontal
esc 1/2



Alcado Lateral
esc 1/2

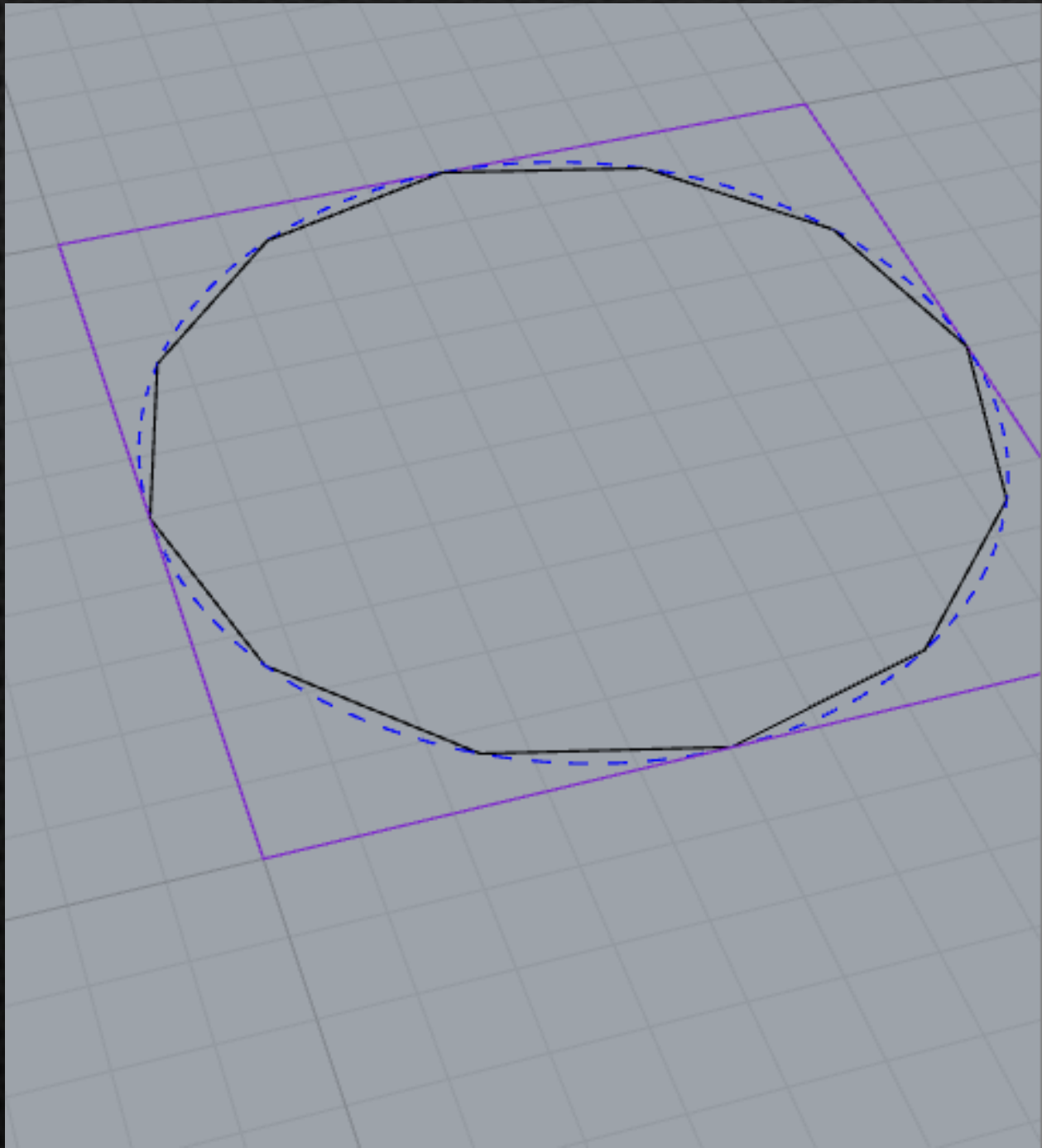
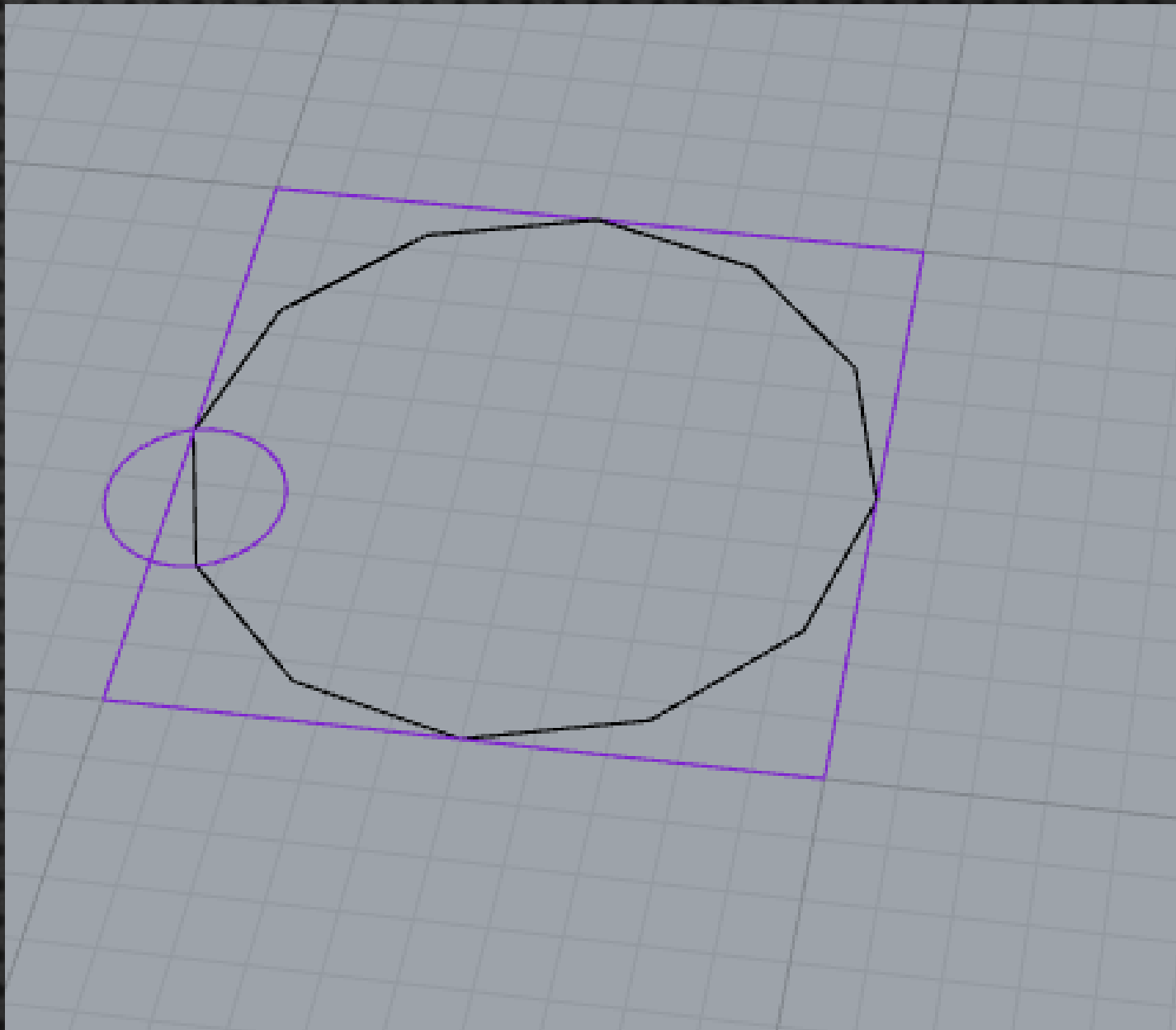
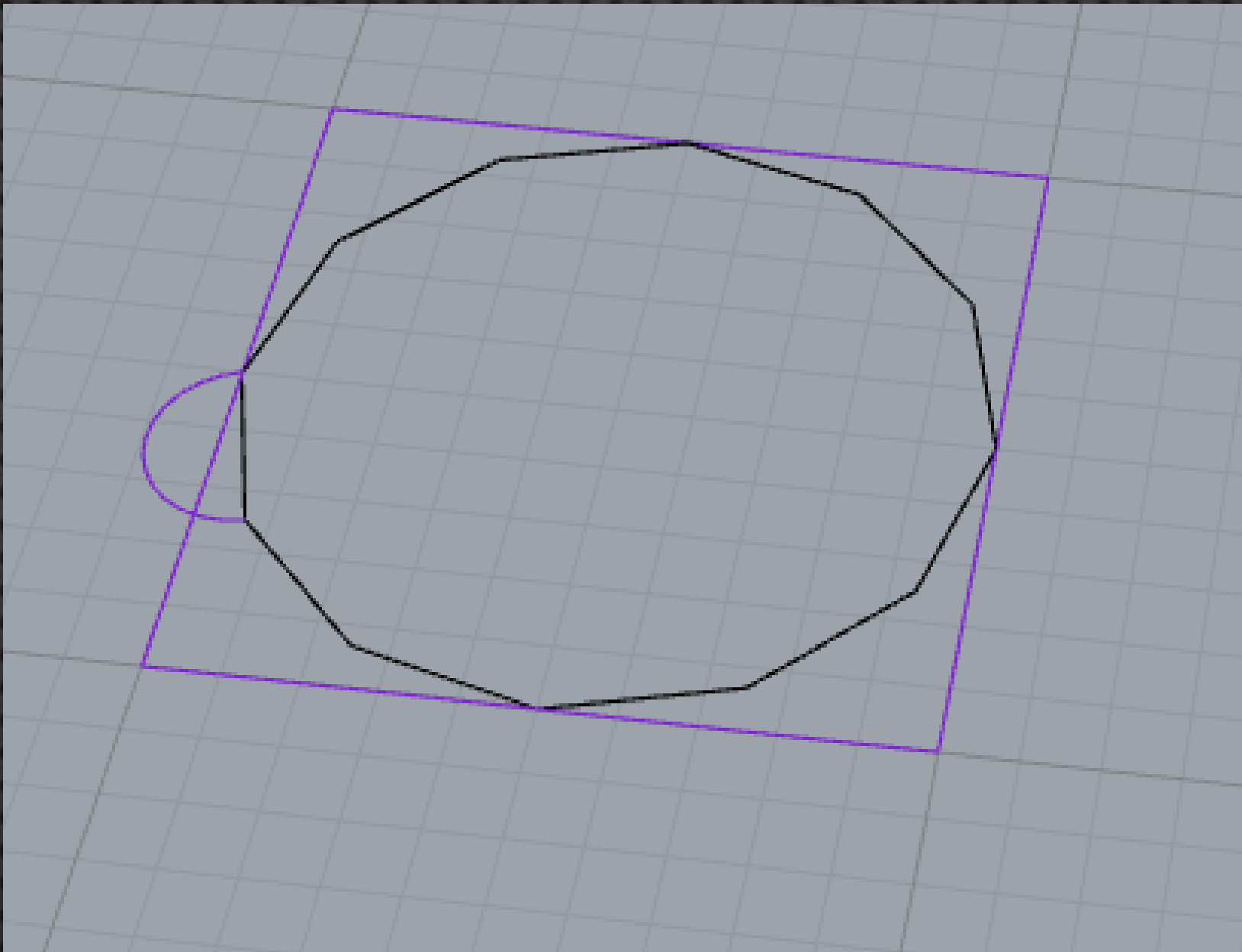
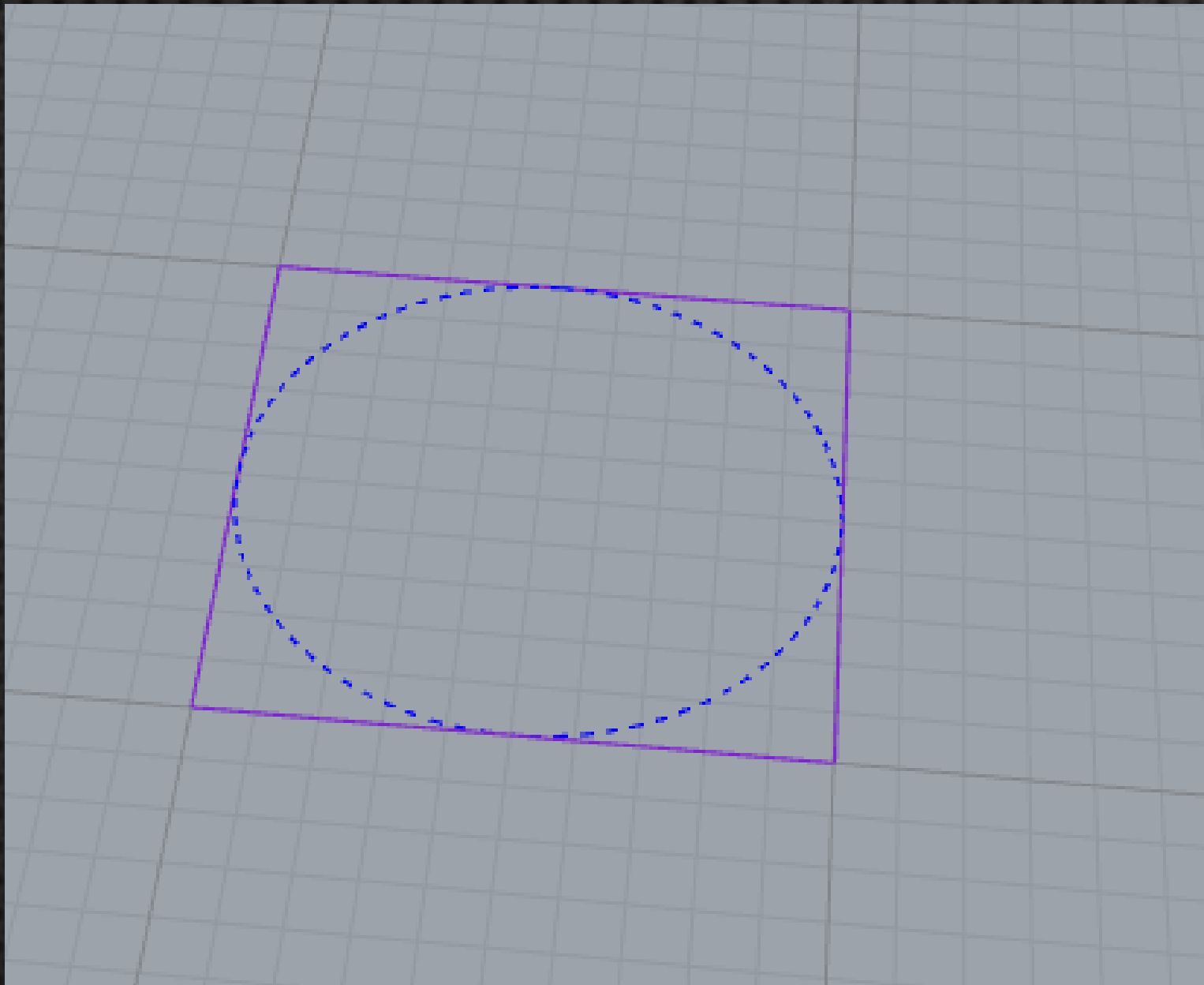


Planta
esc 1/2



Modelo

4.Abobada de Bolbo Alveolada



Q Search

ayer

Default

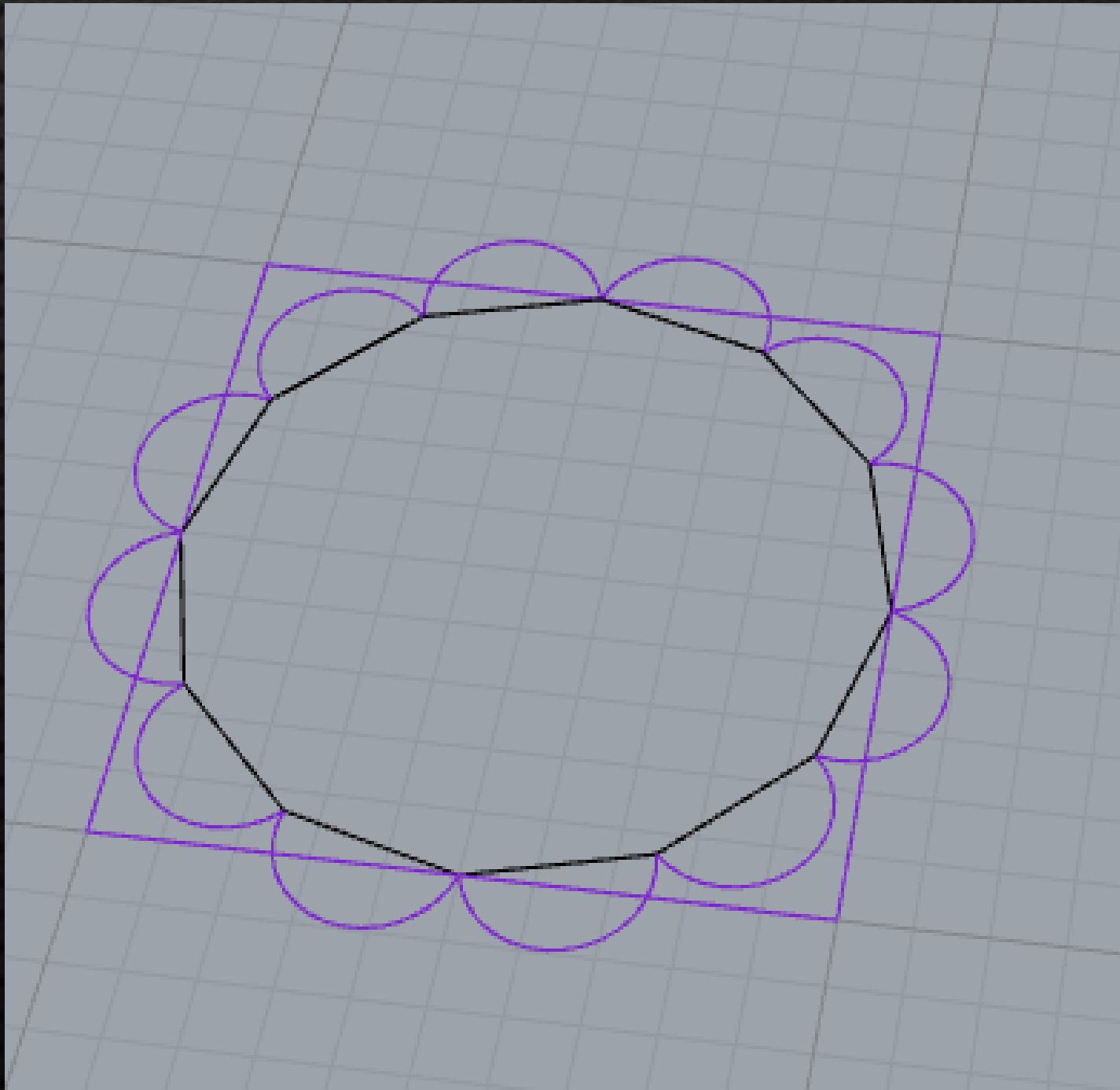
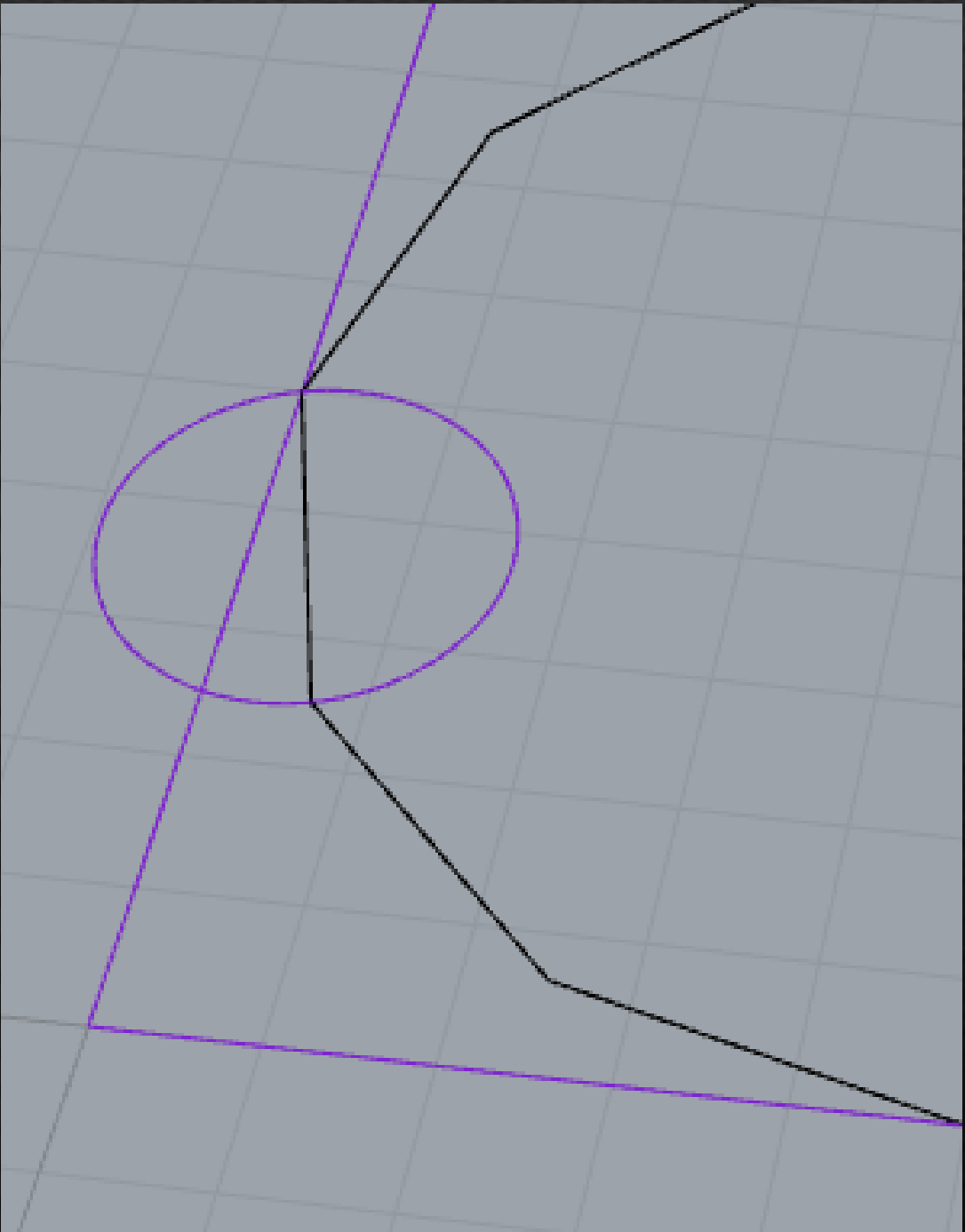
ab de bolbc

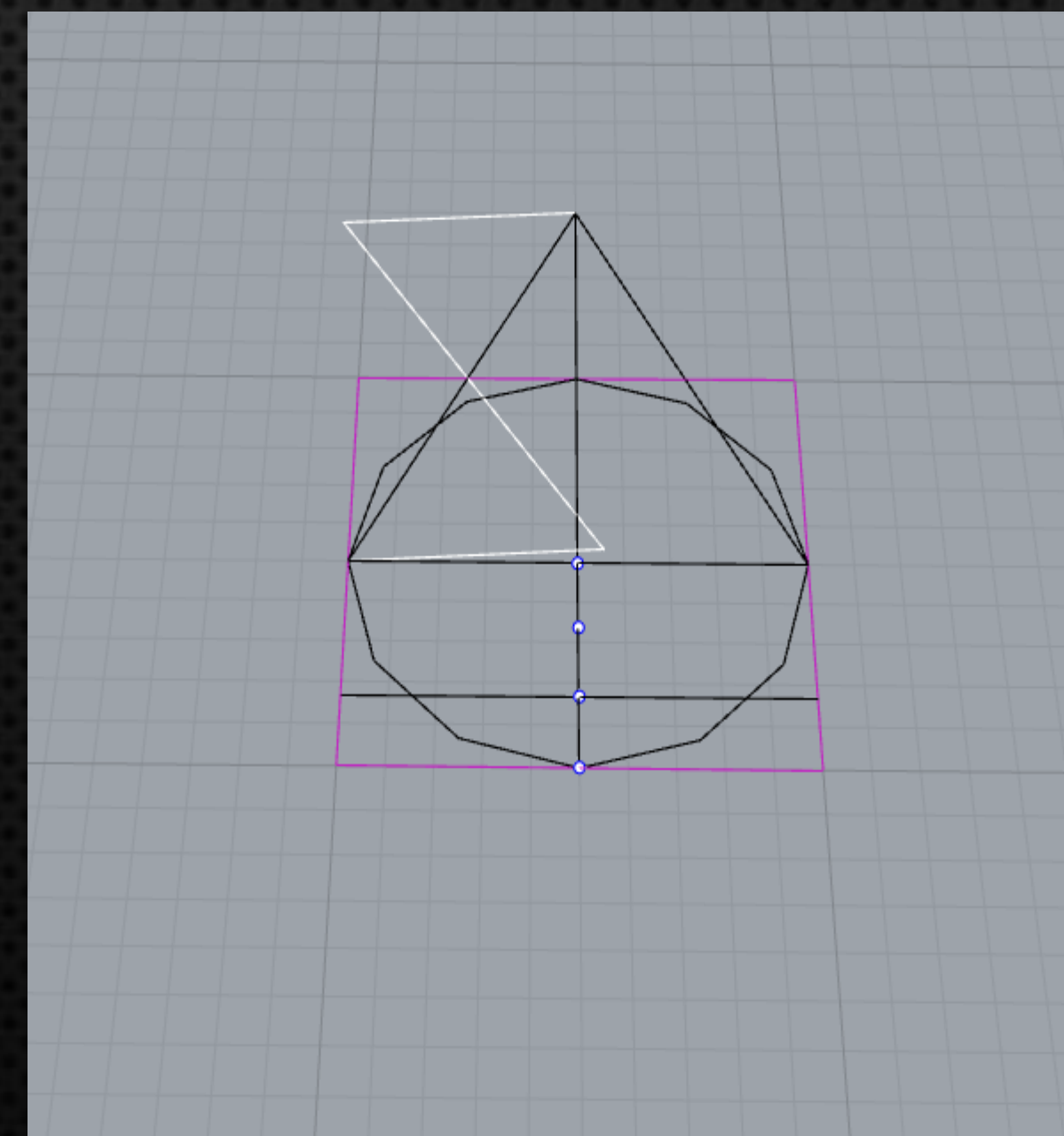
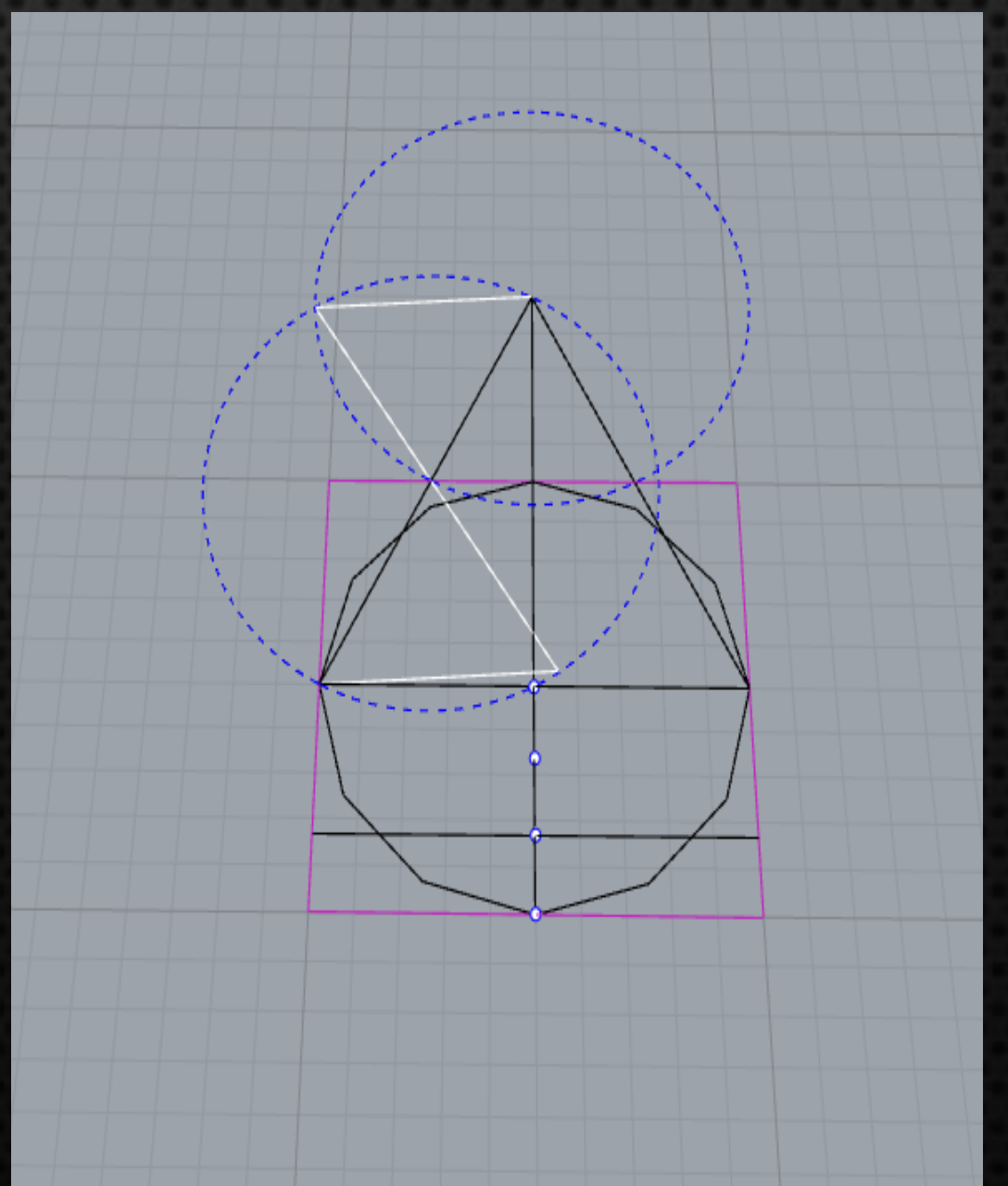
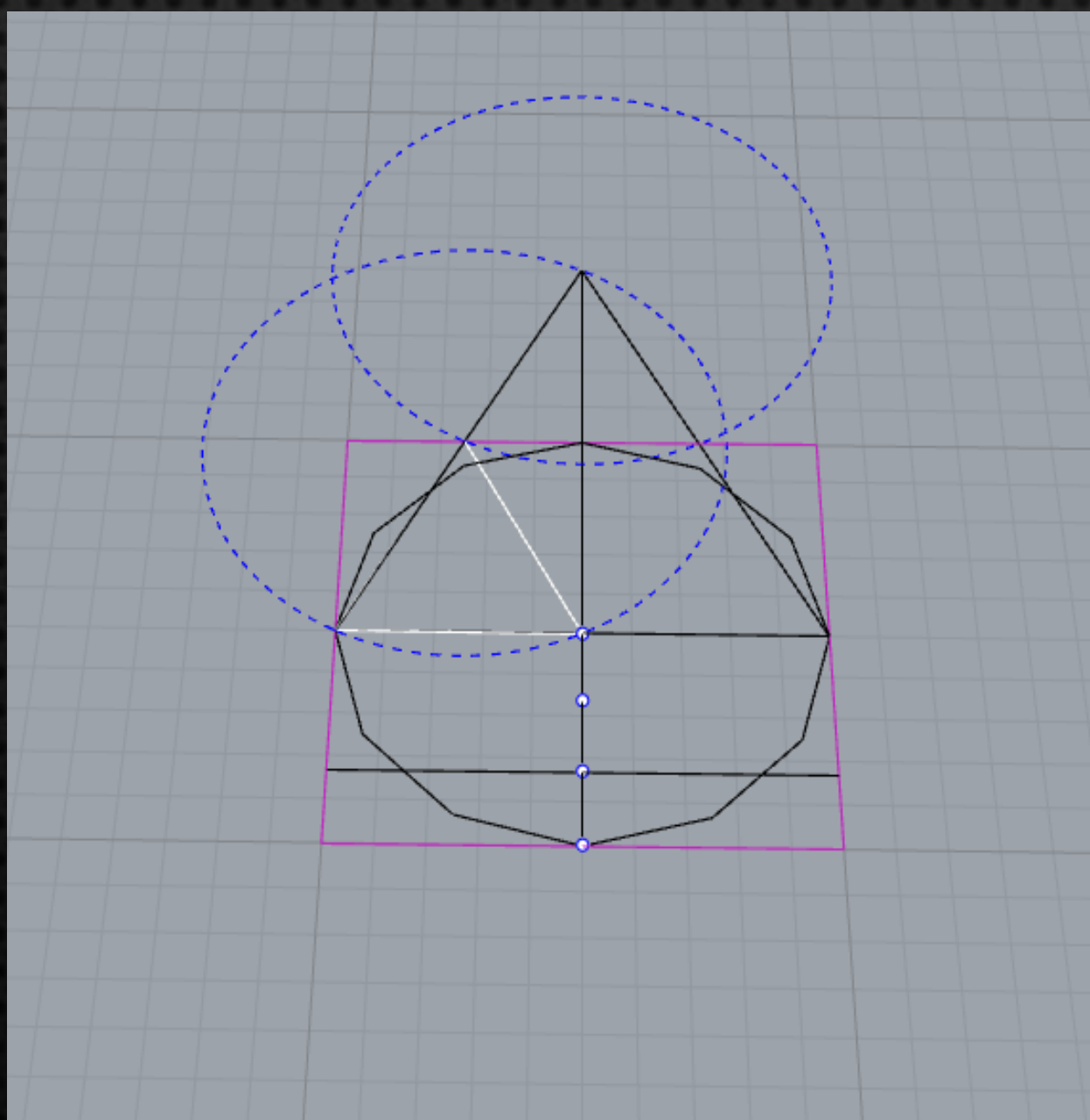
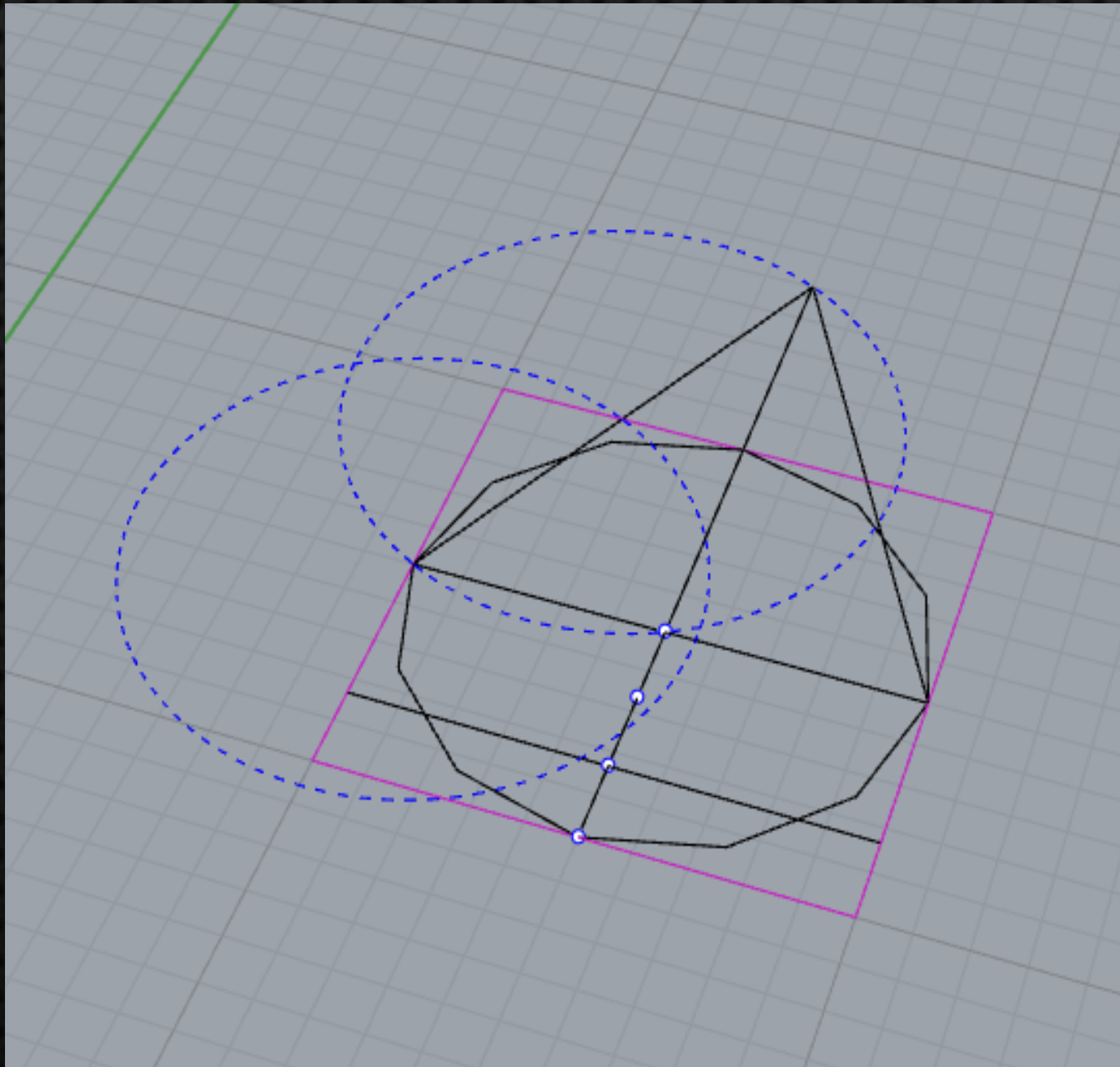
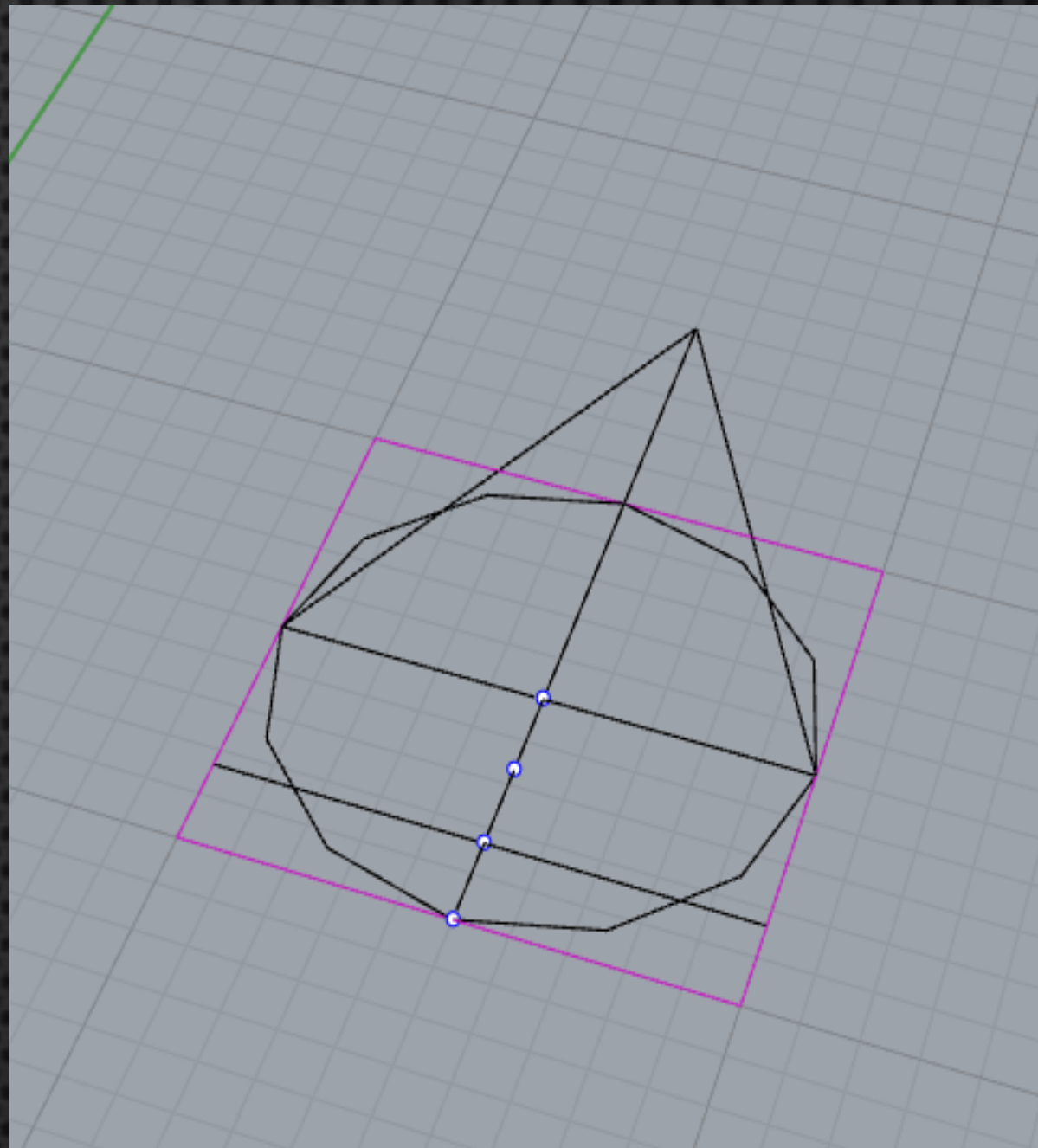
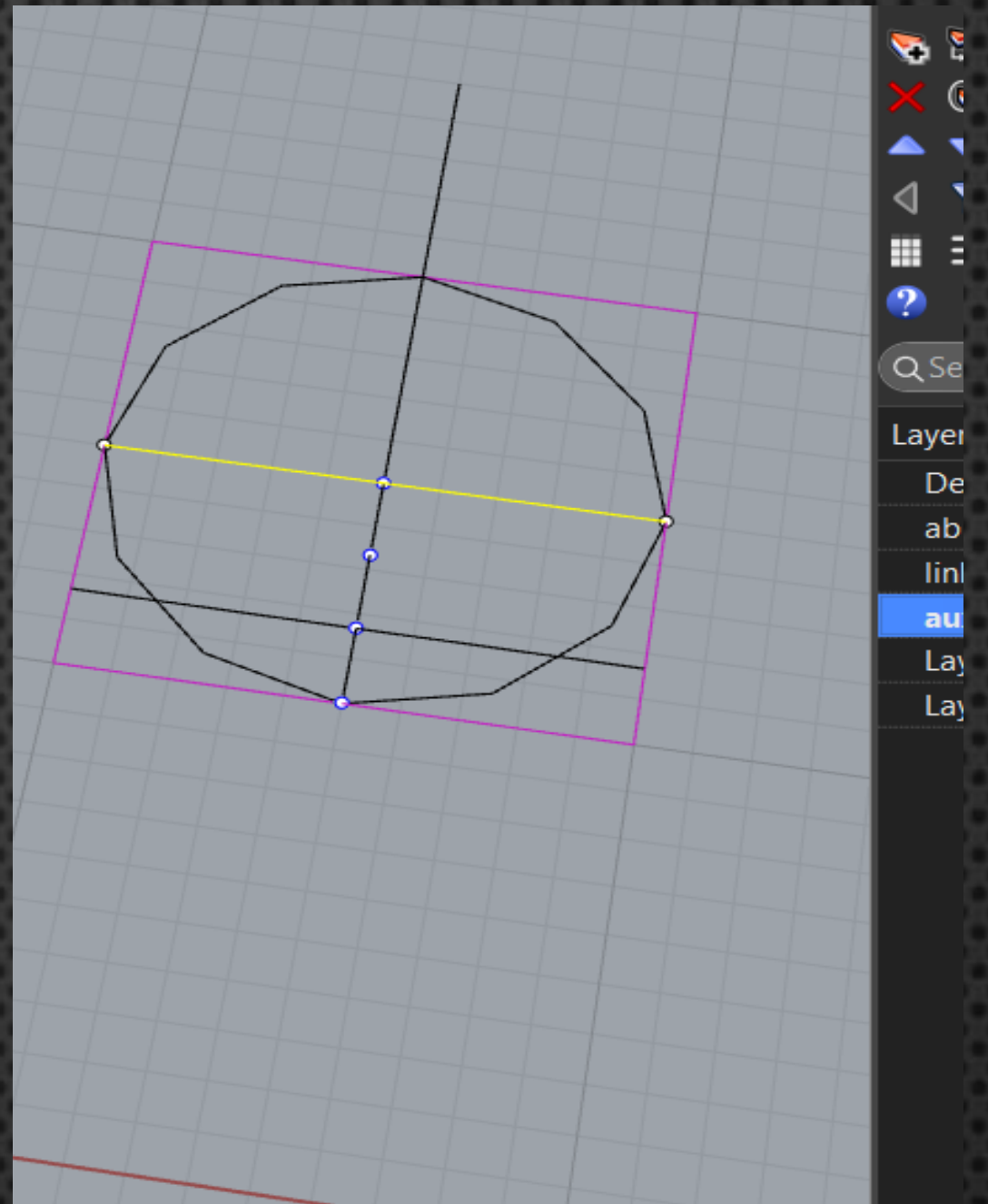
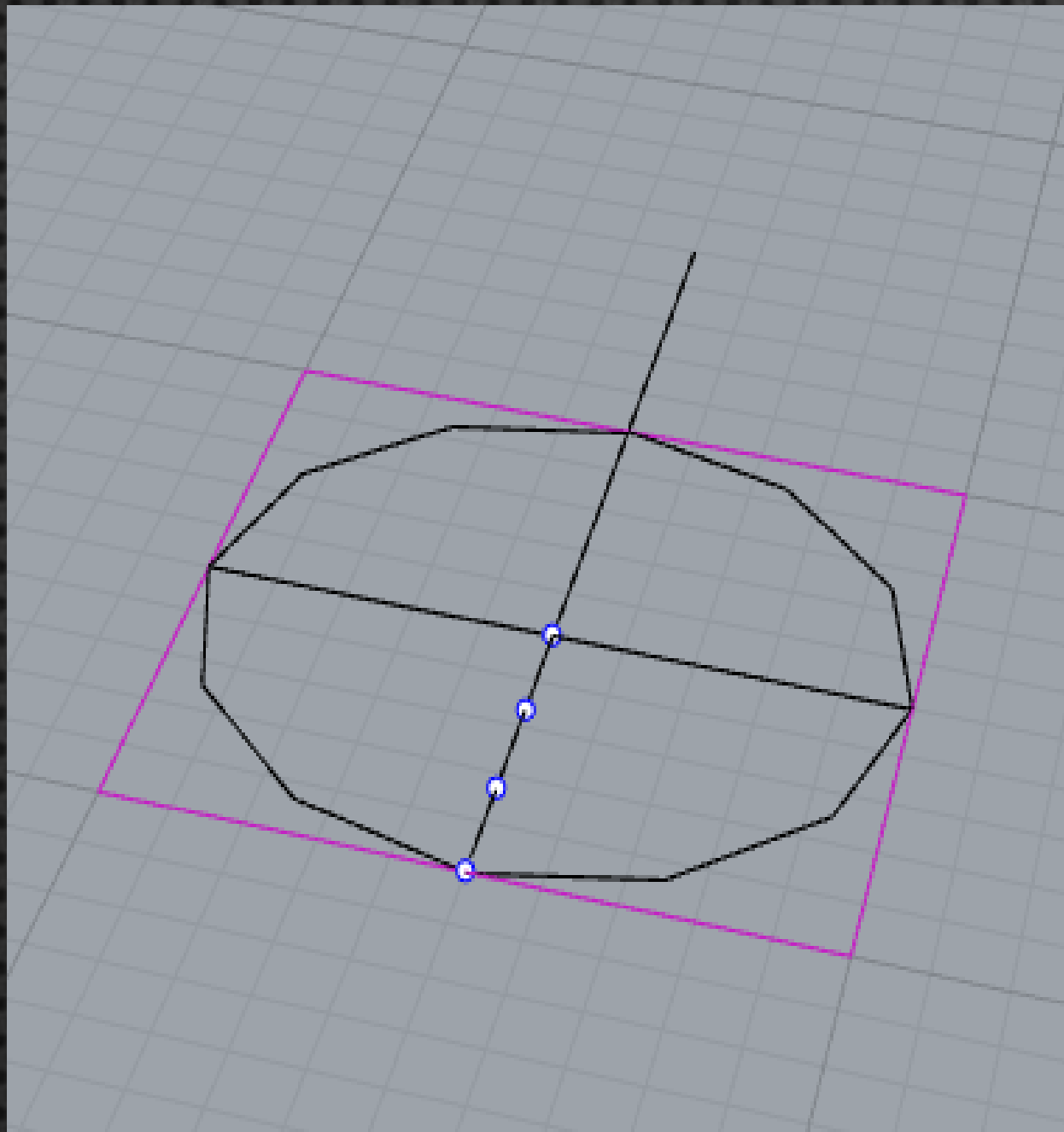
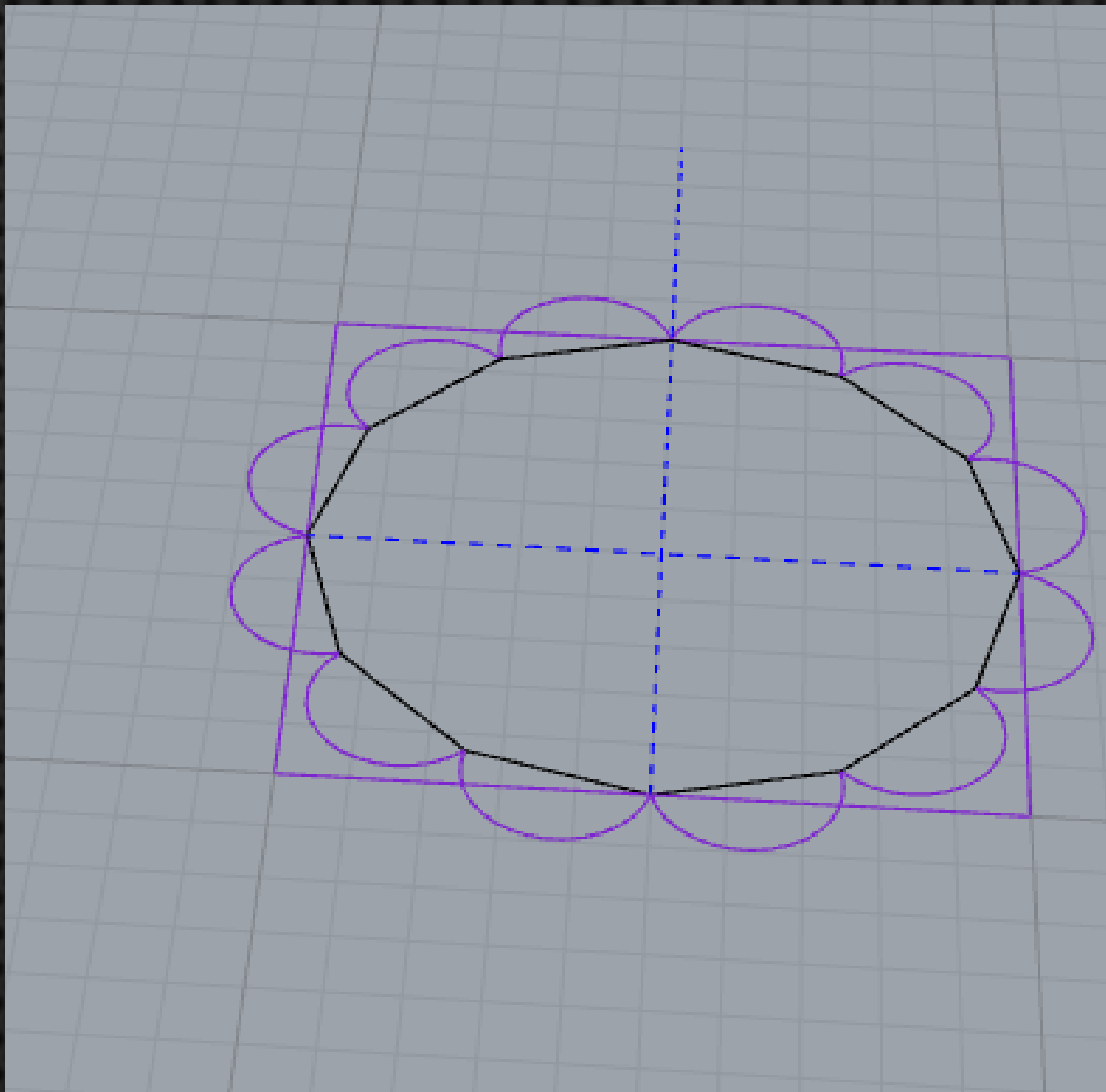
linhas

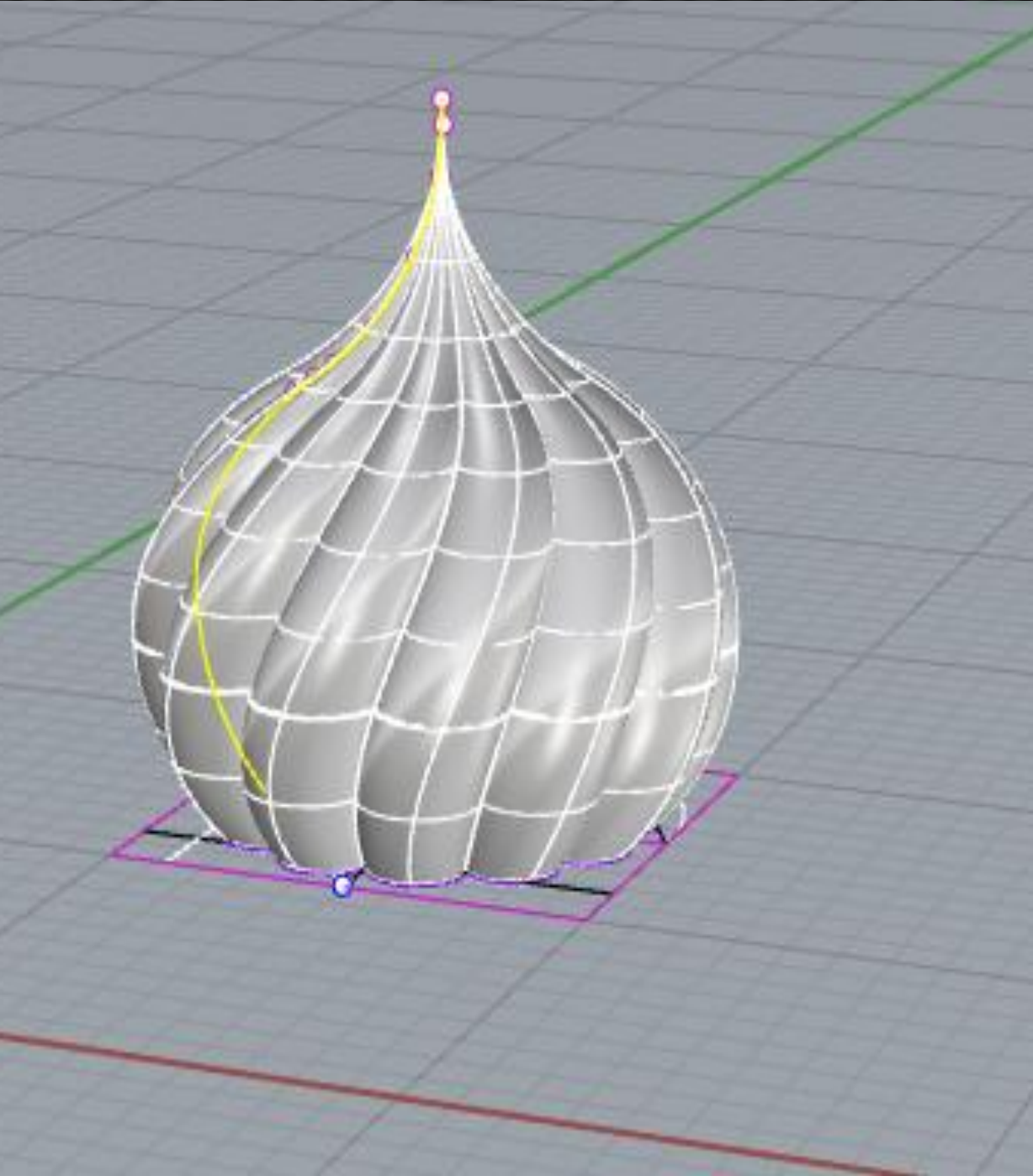
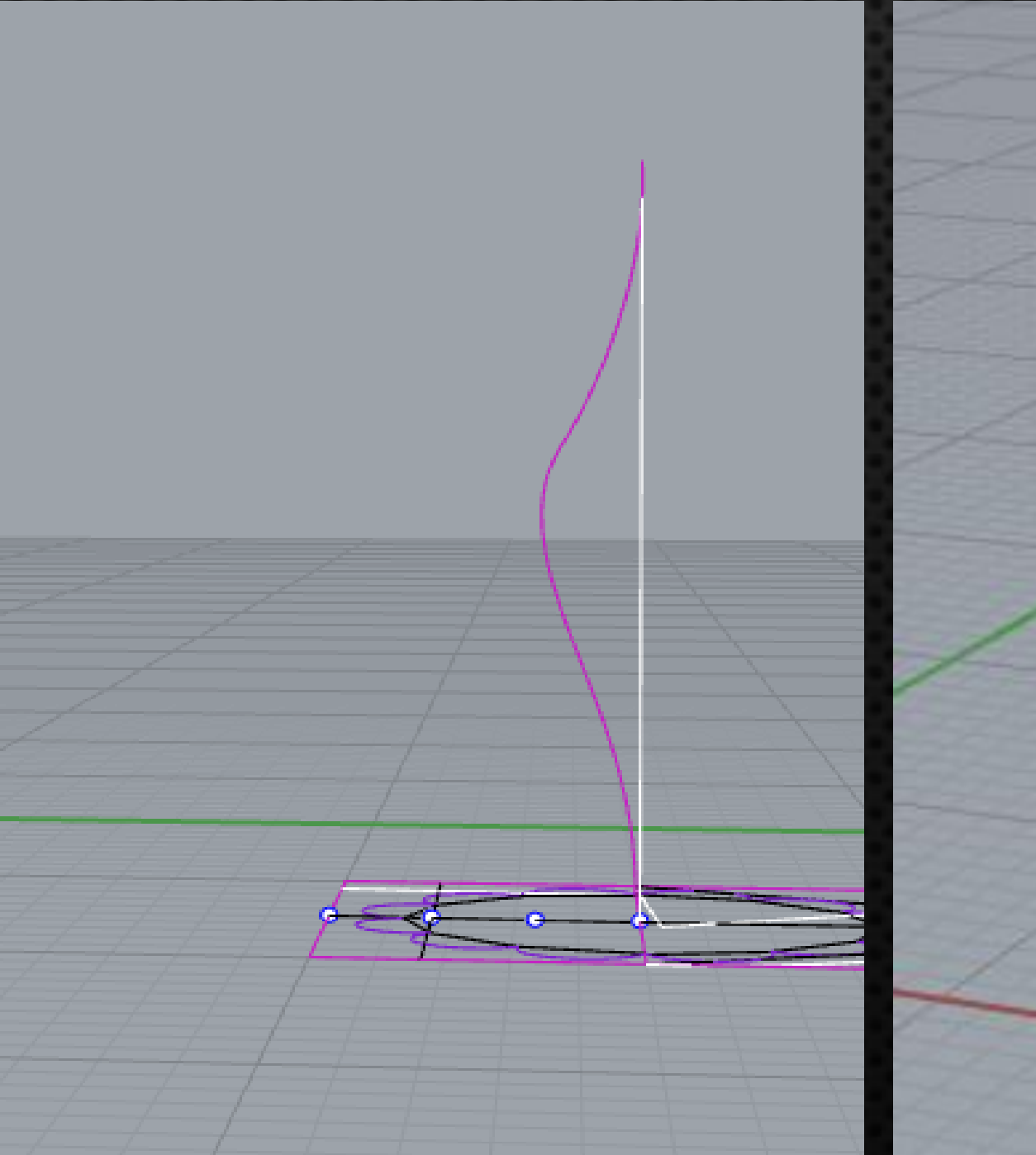
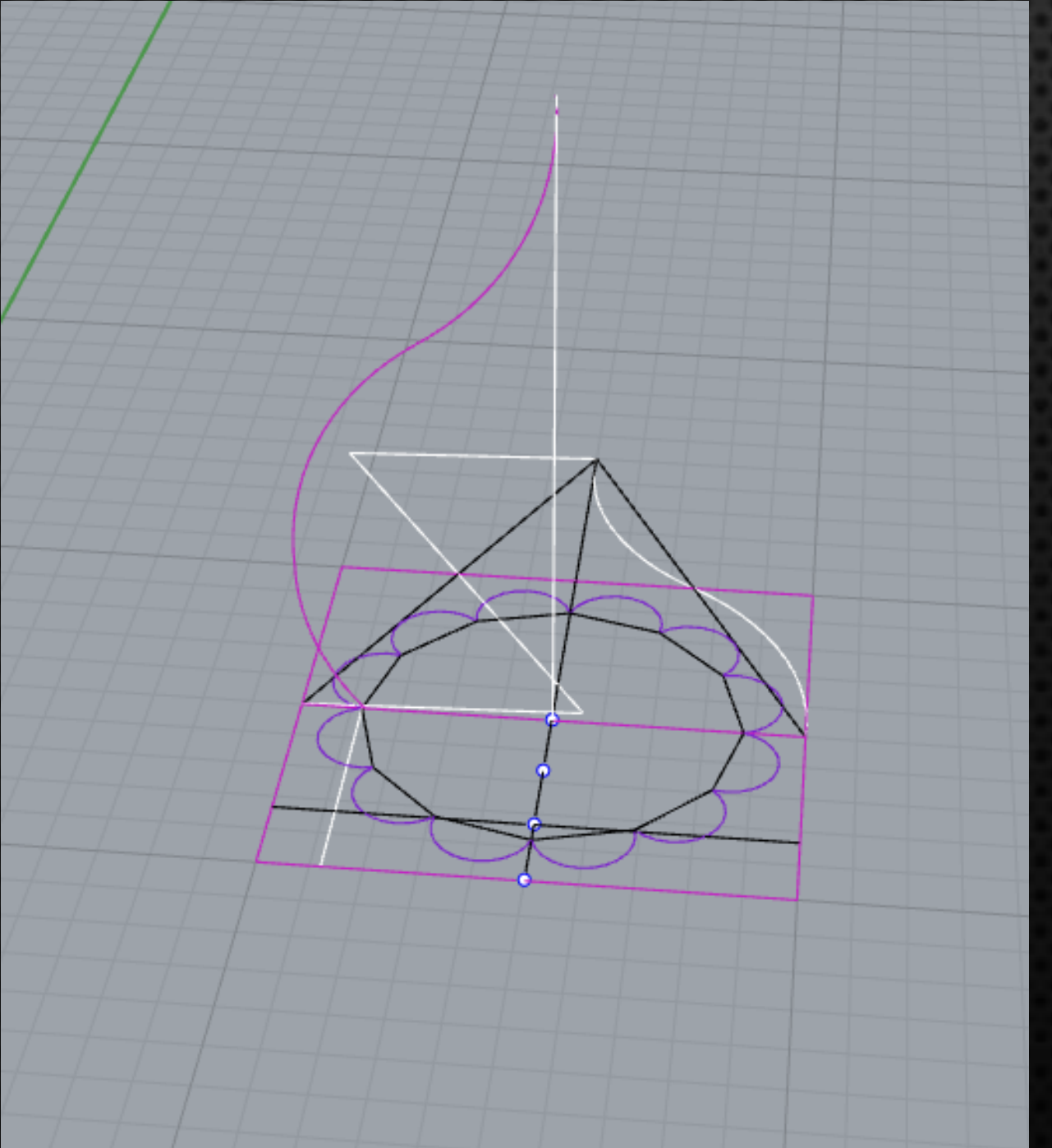
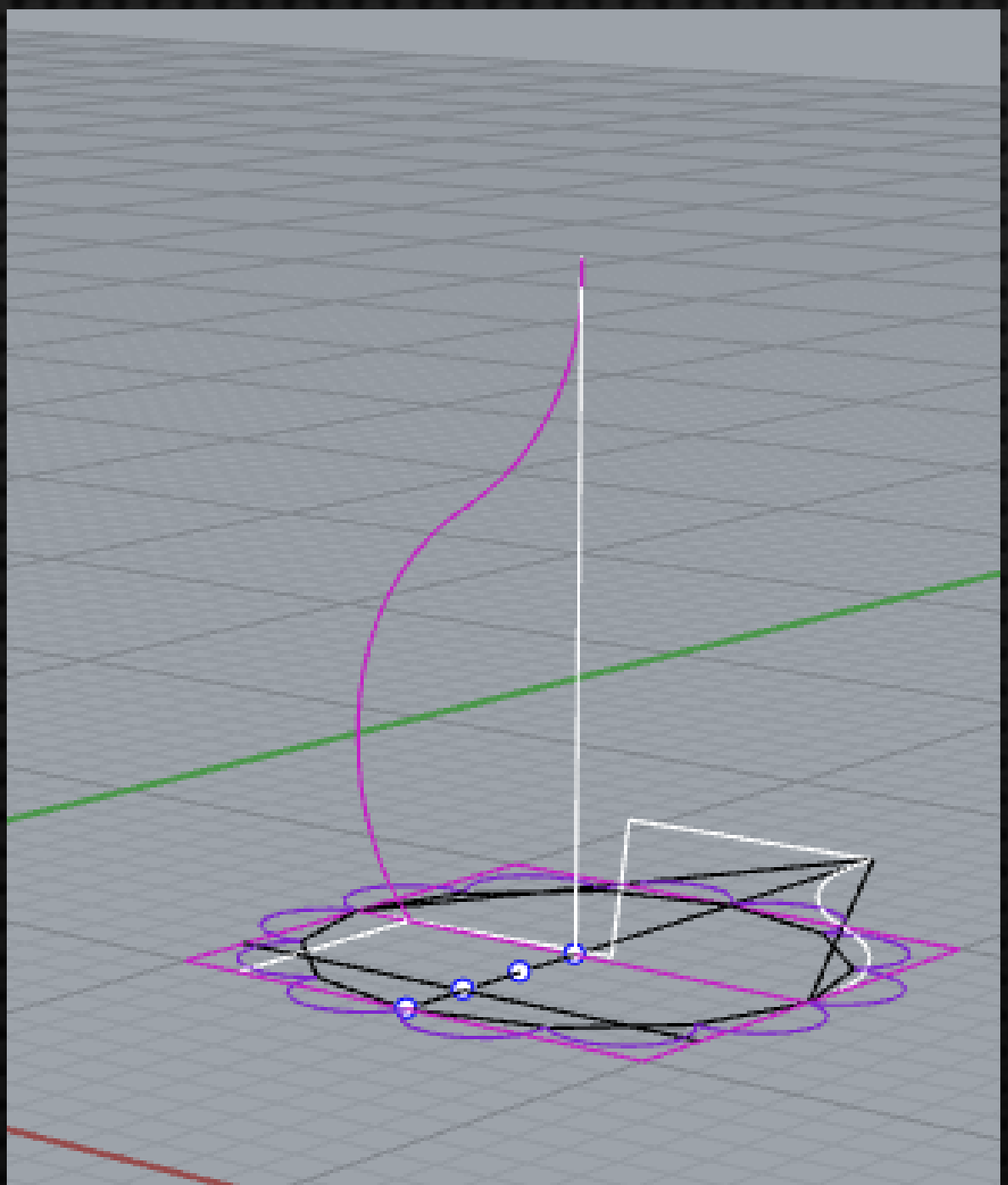
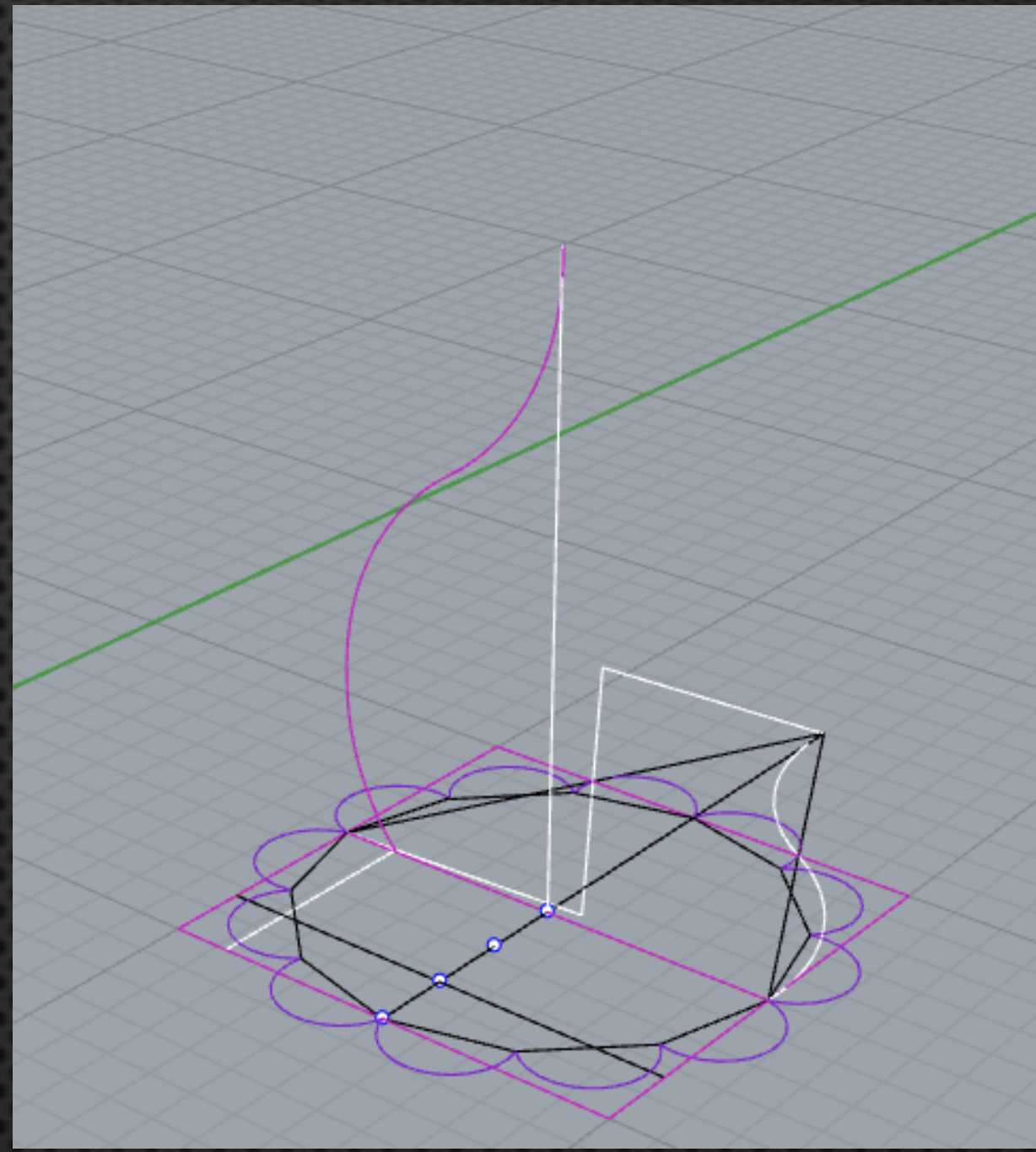
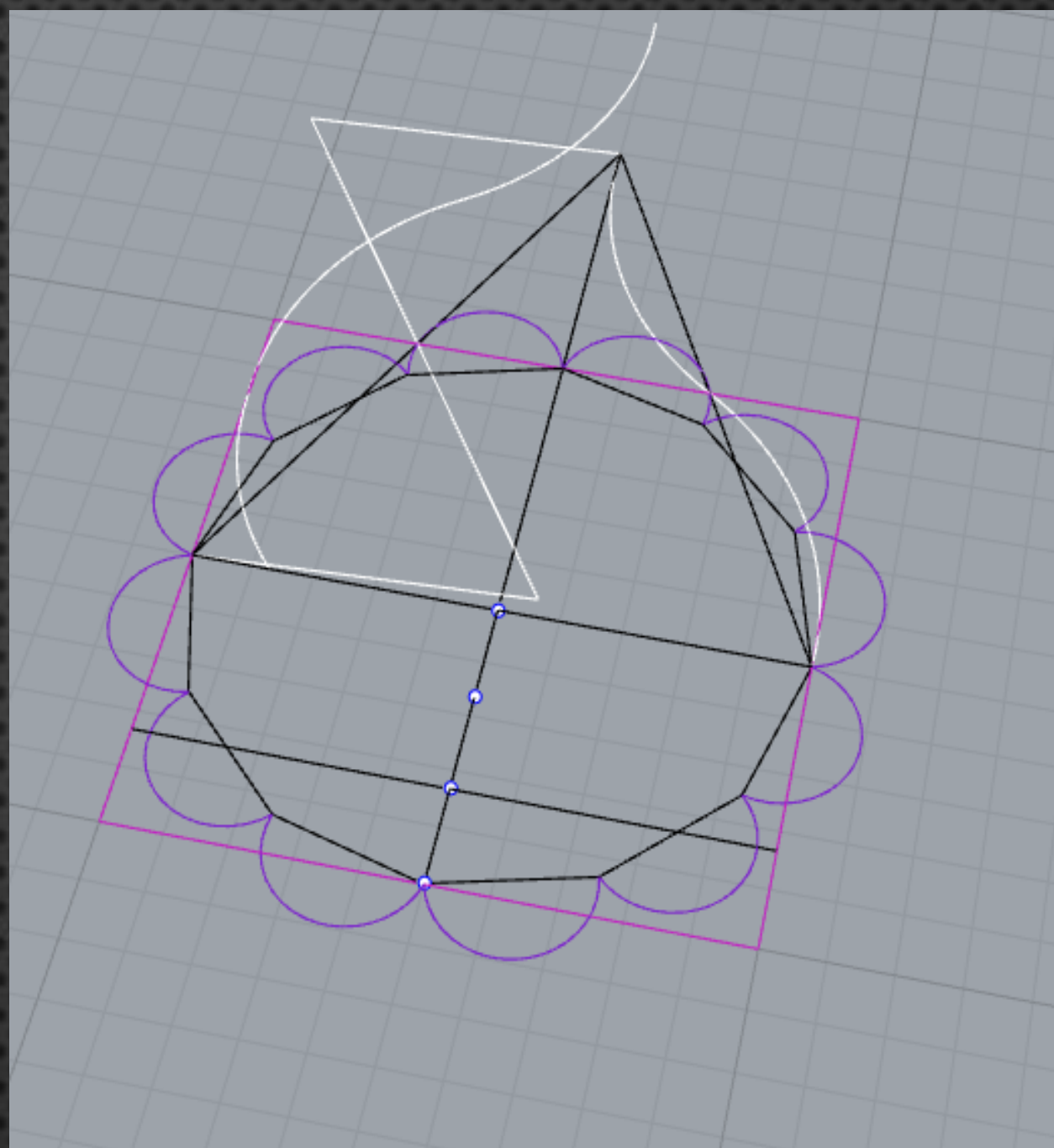
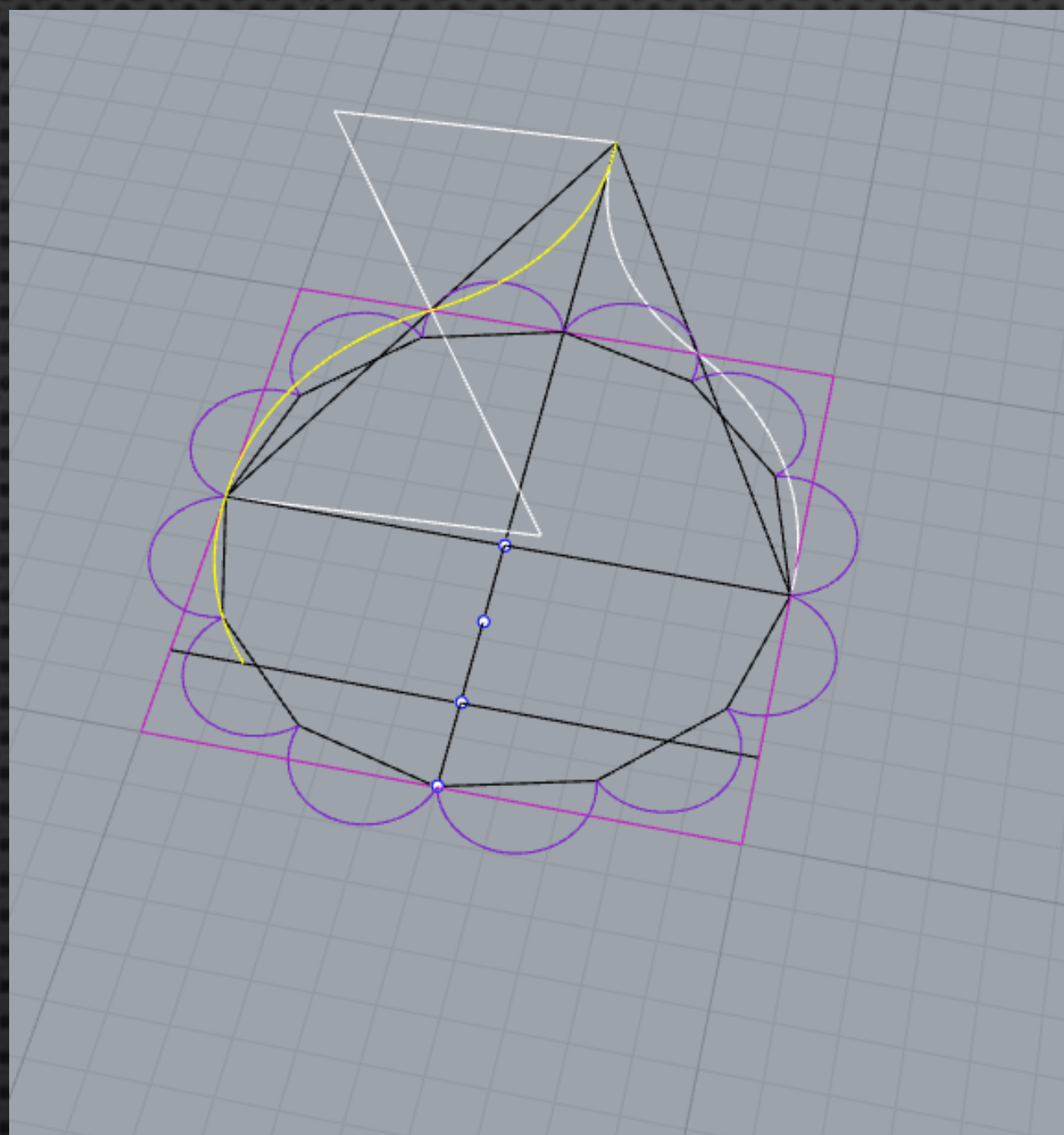
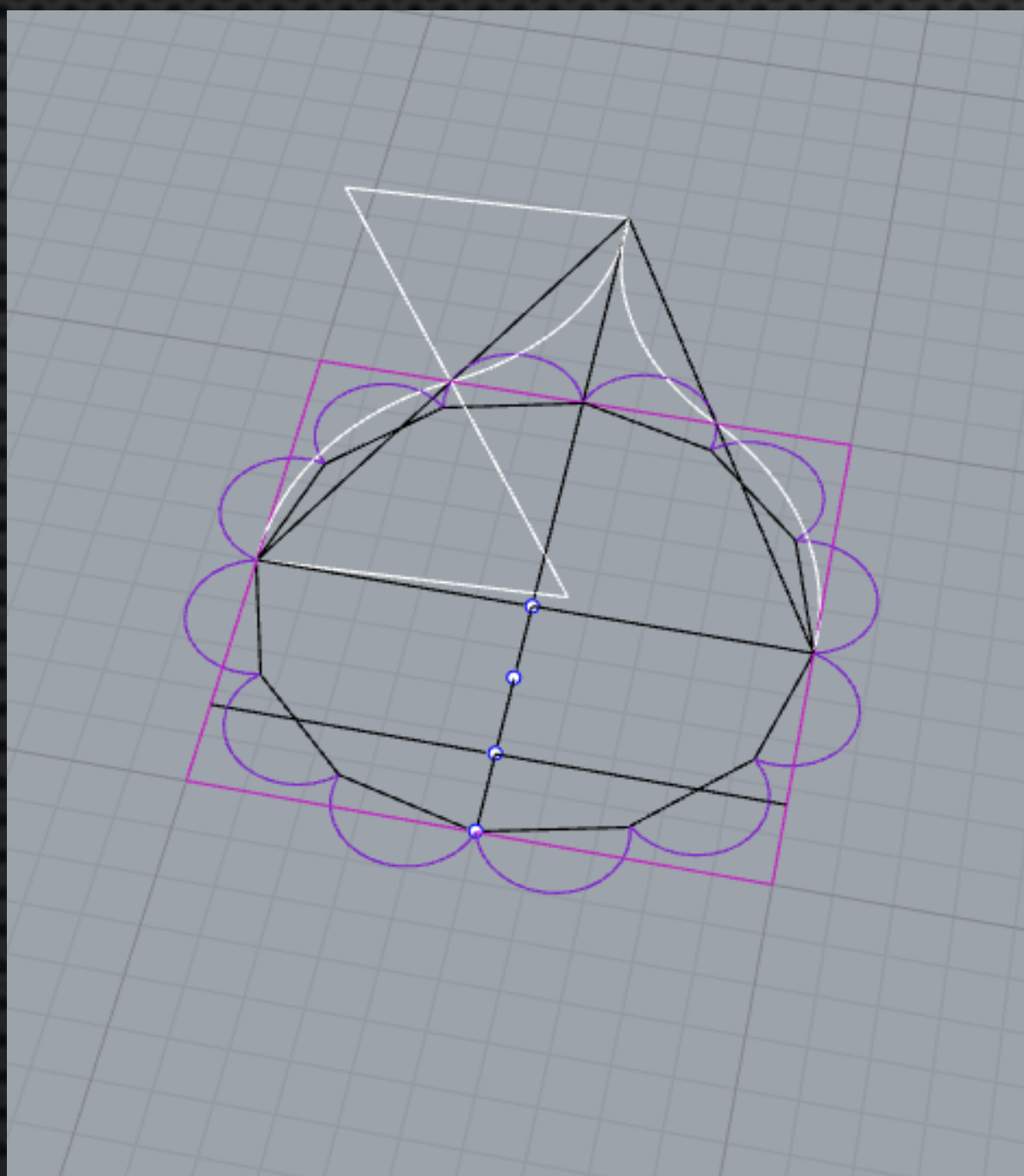
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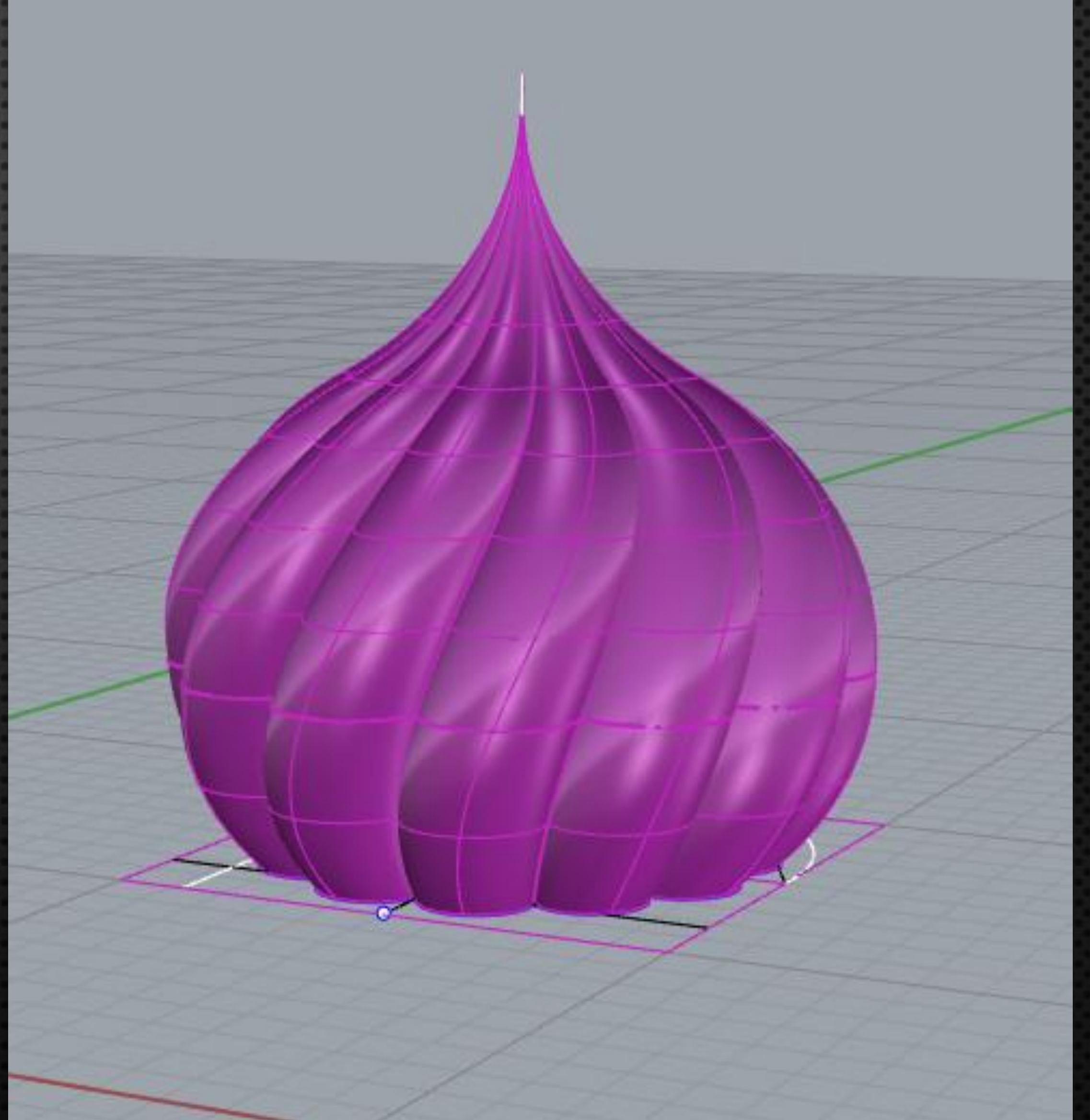
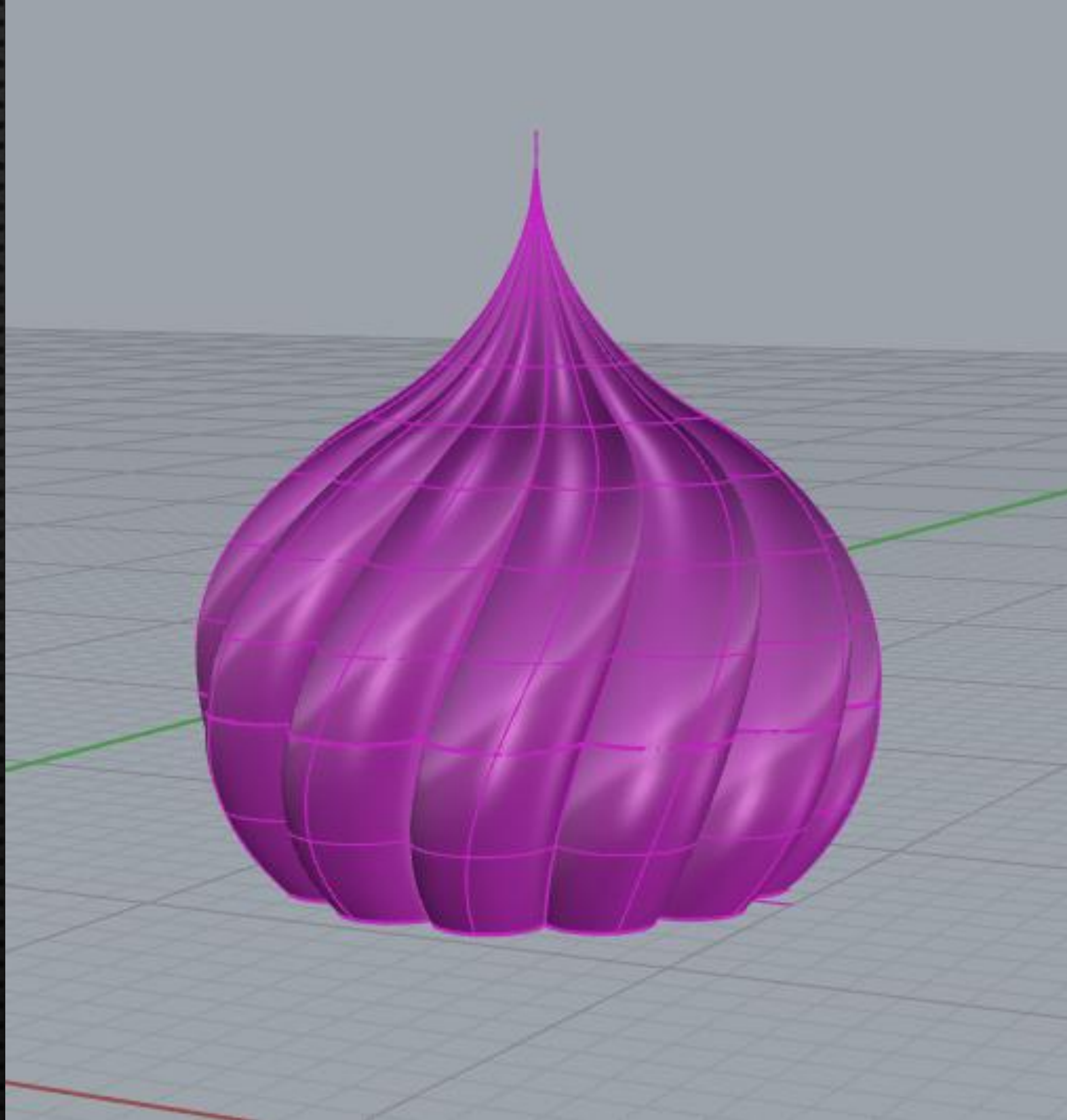
Layer 04

Layer 05

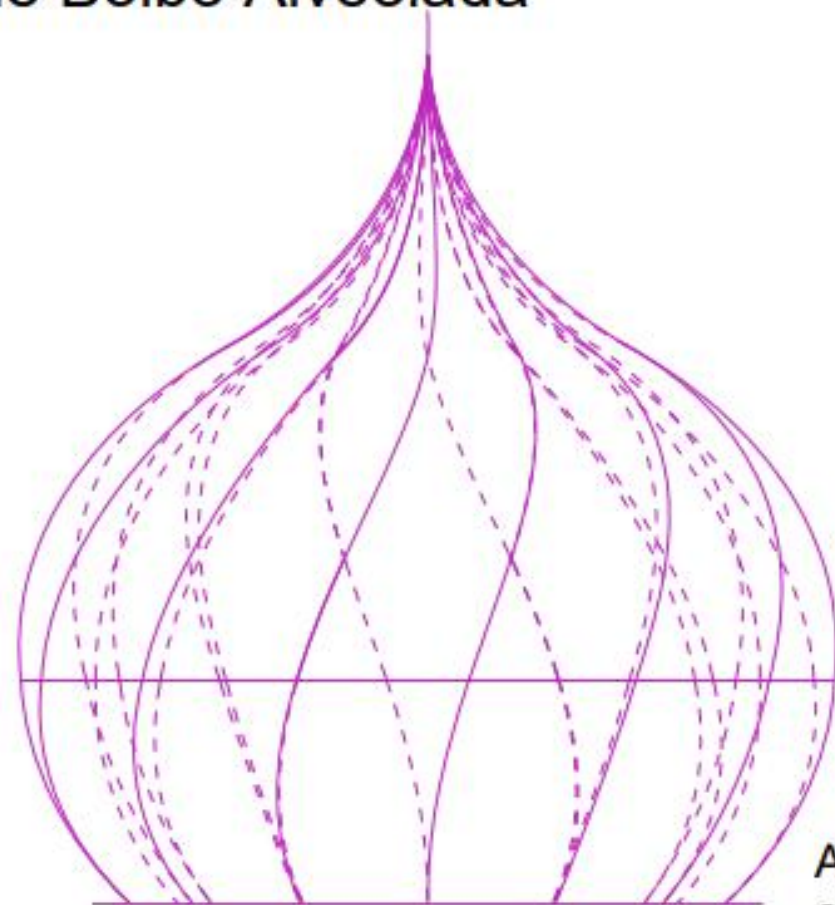




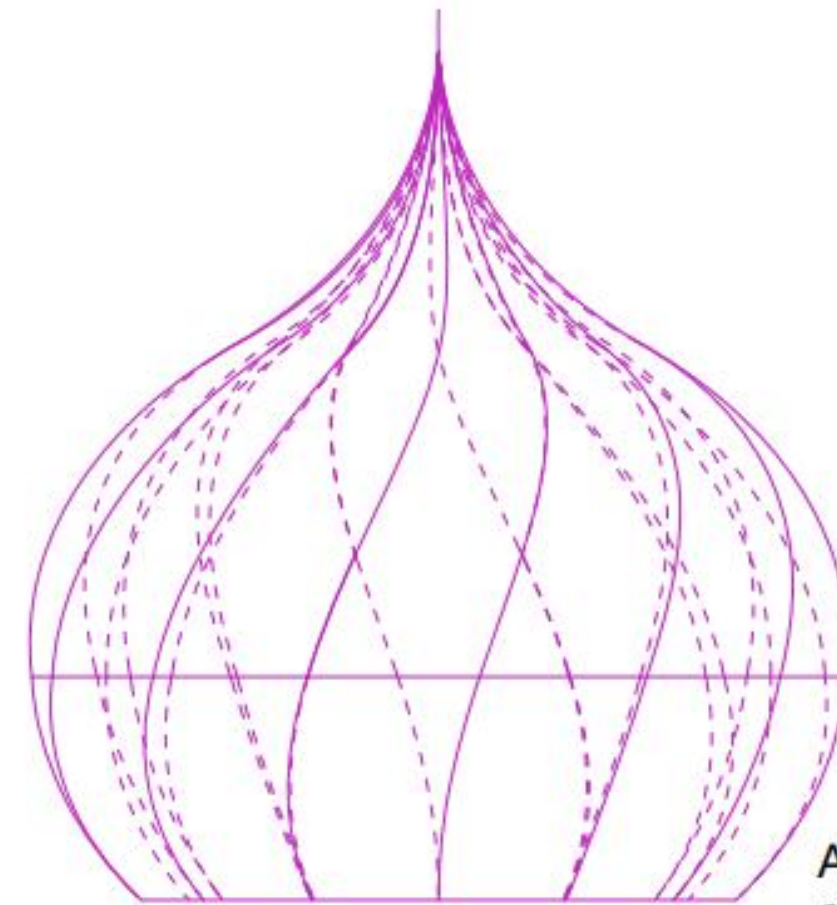




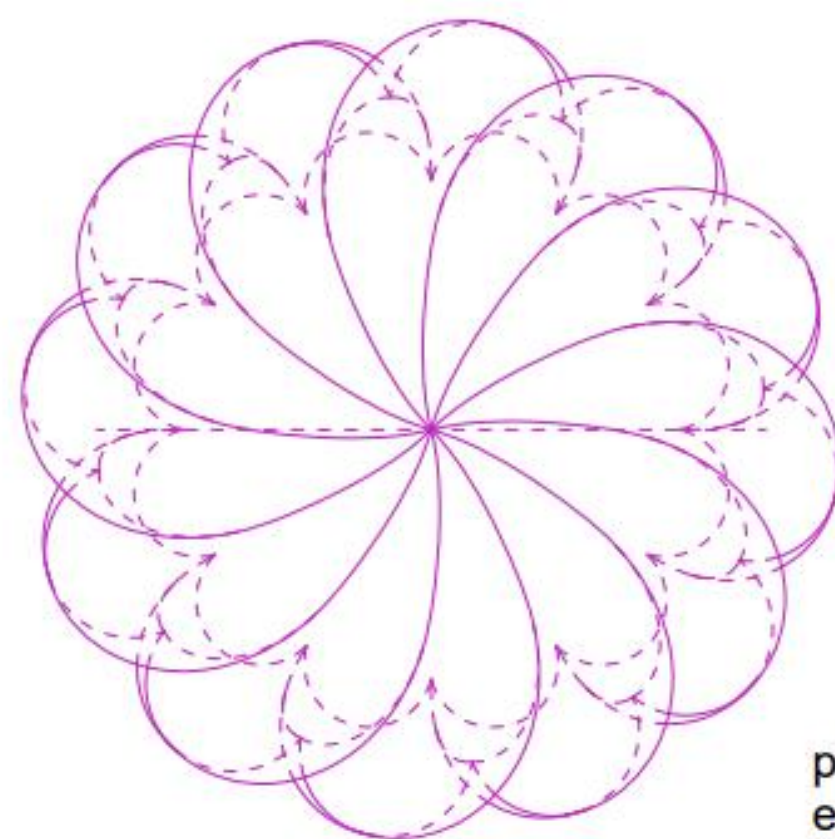
Abobada de Bolbo Alveolada



Alcado Frontal
esc 1/2



Alcado Lateral
esc 1/2

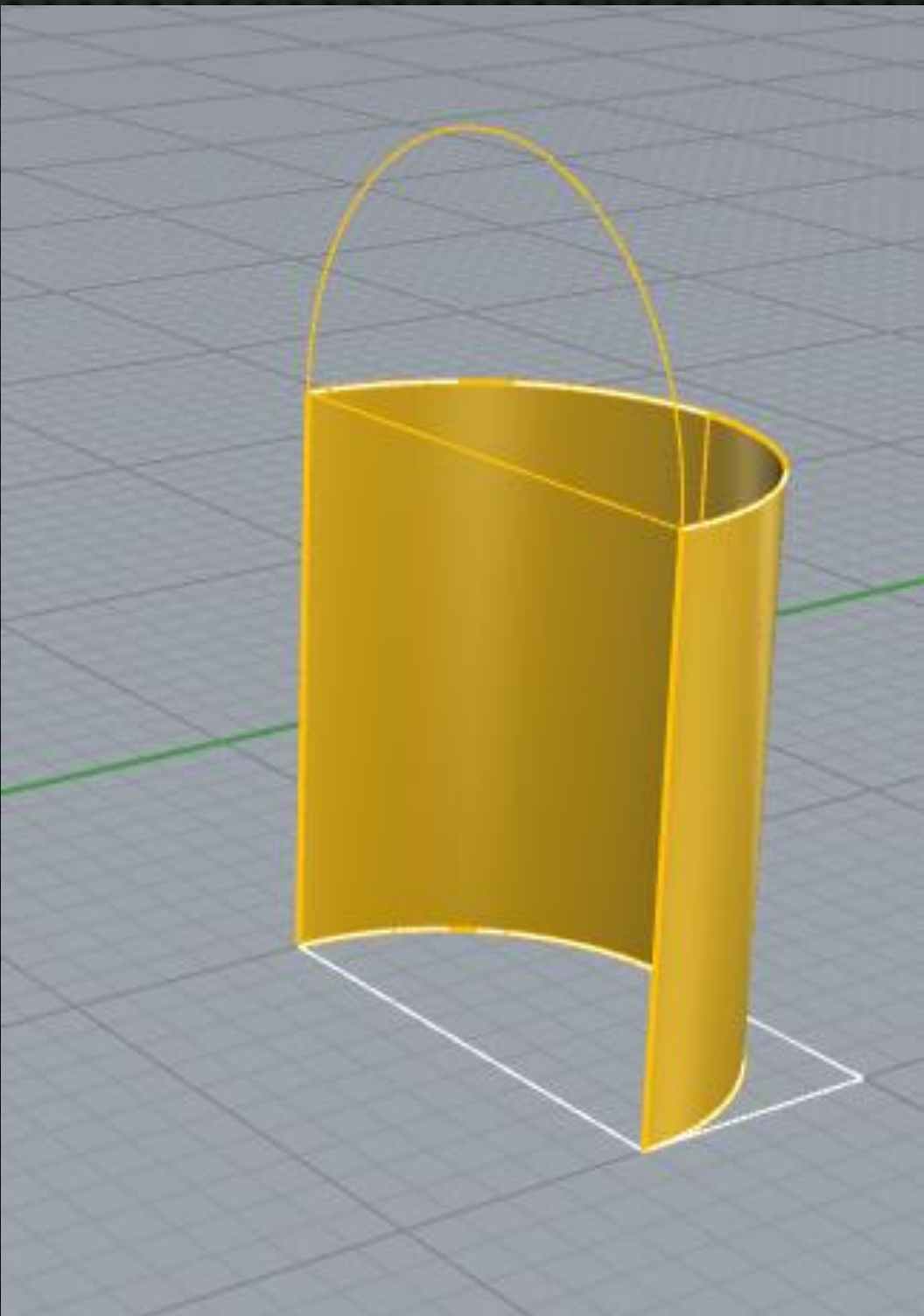
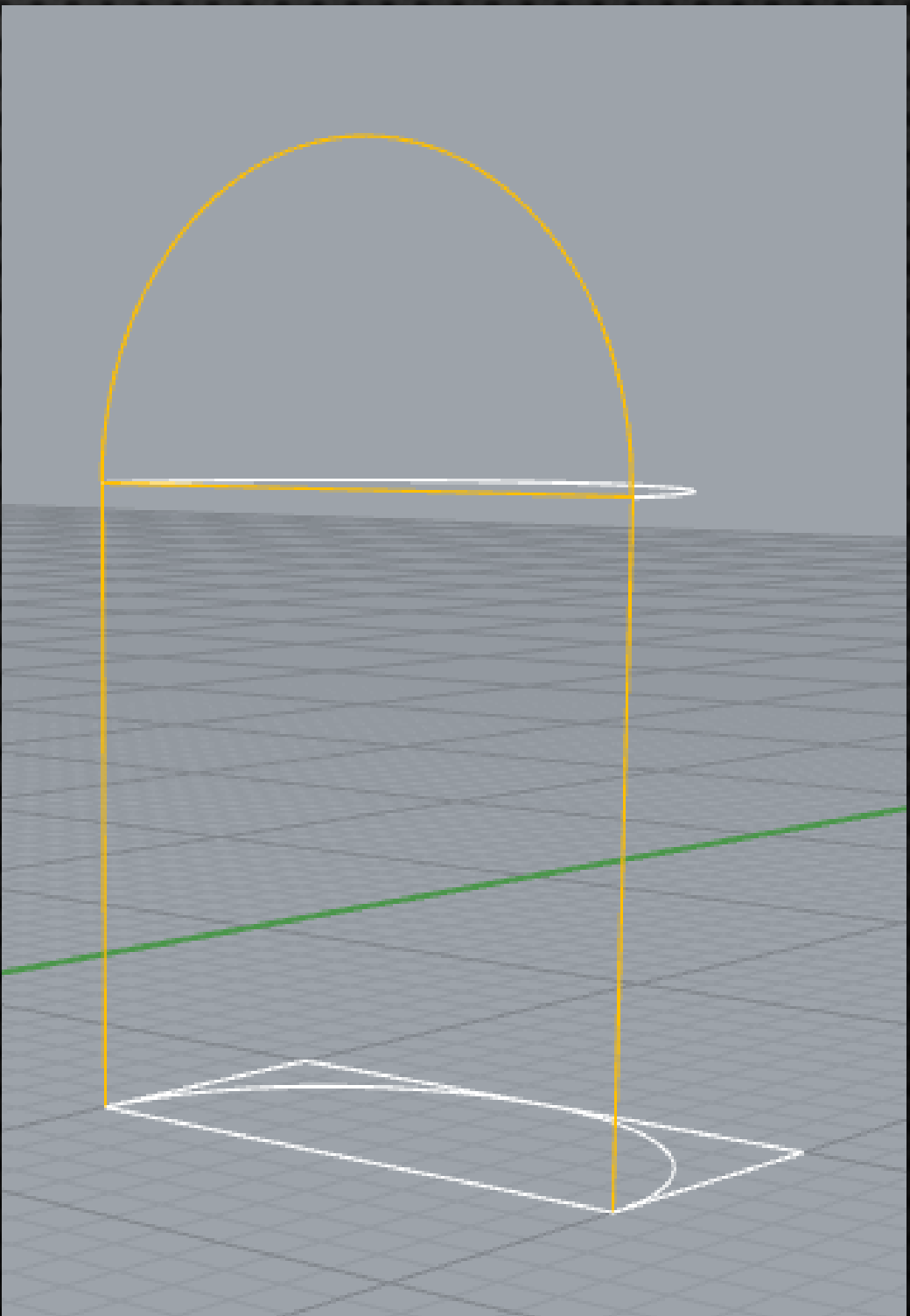
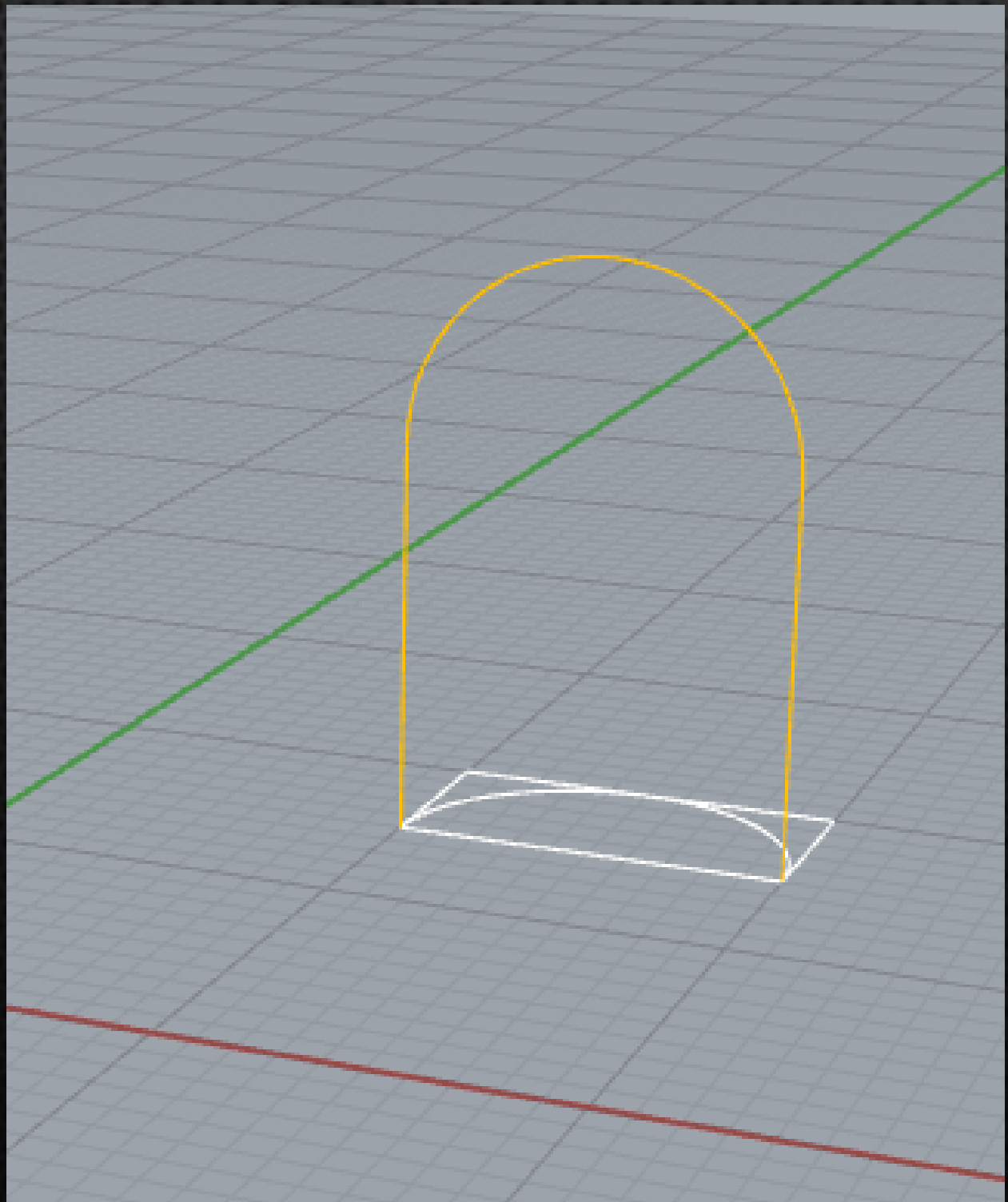
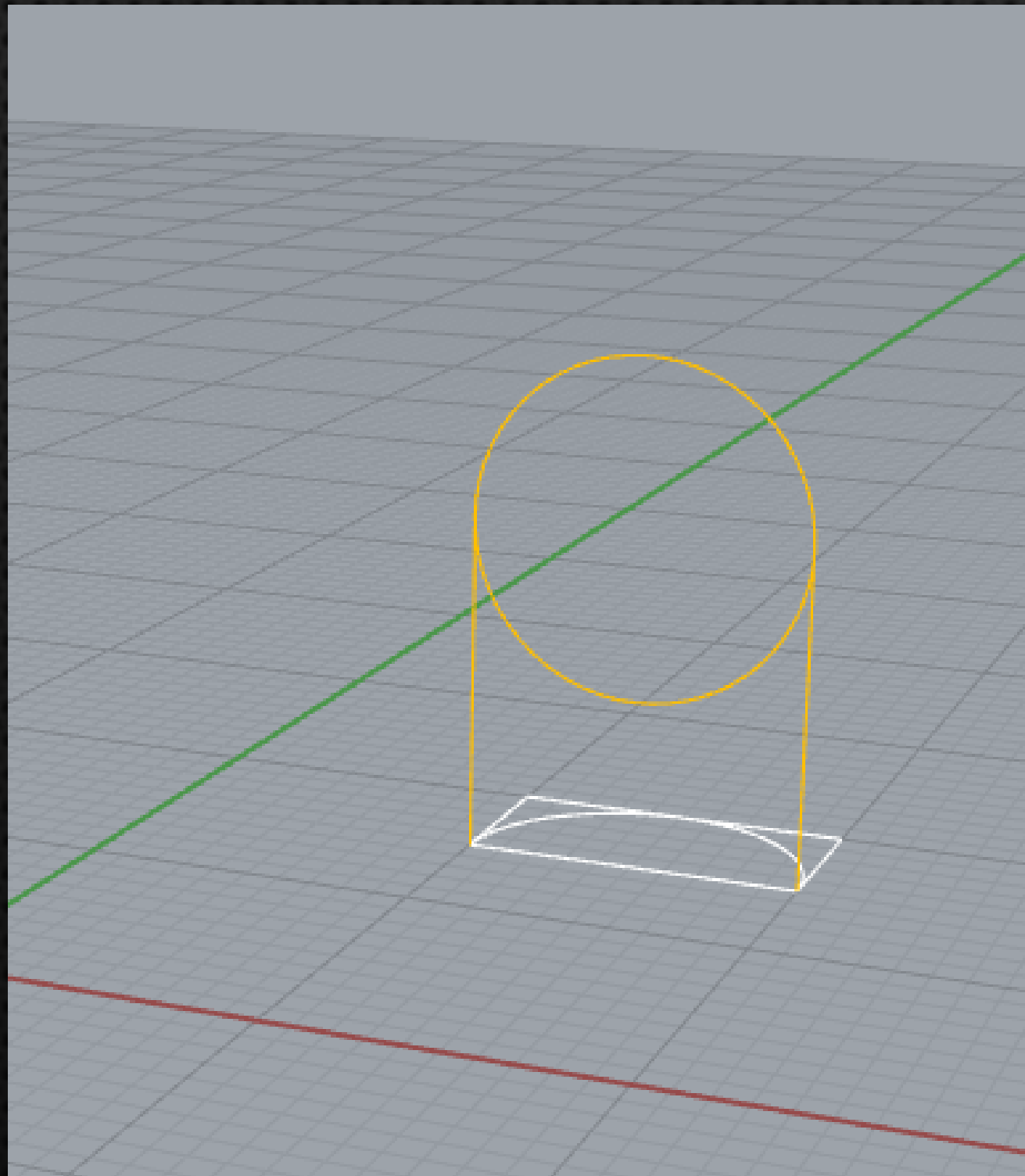
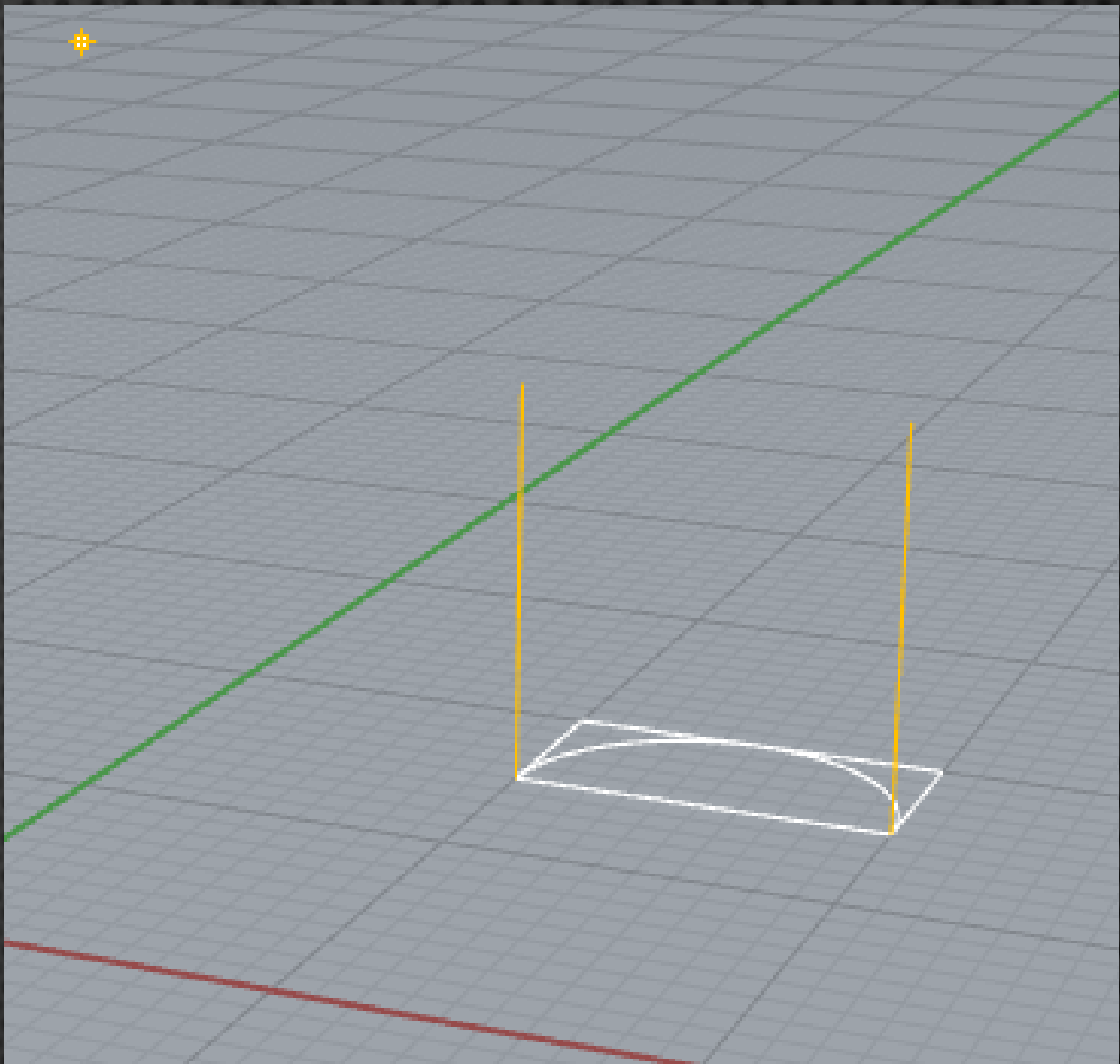
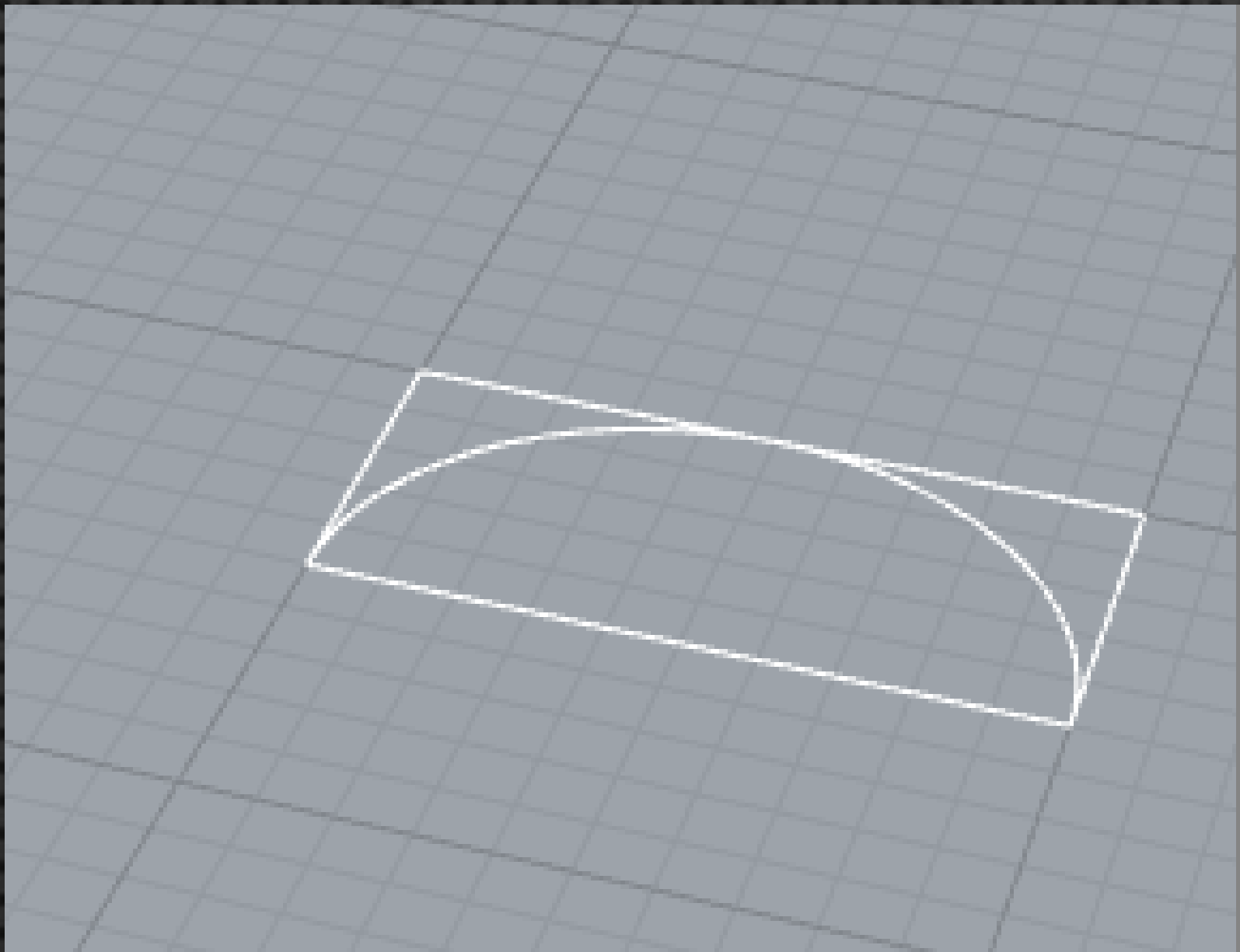
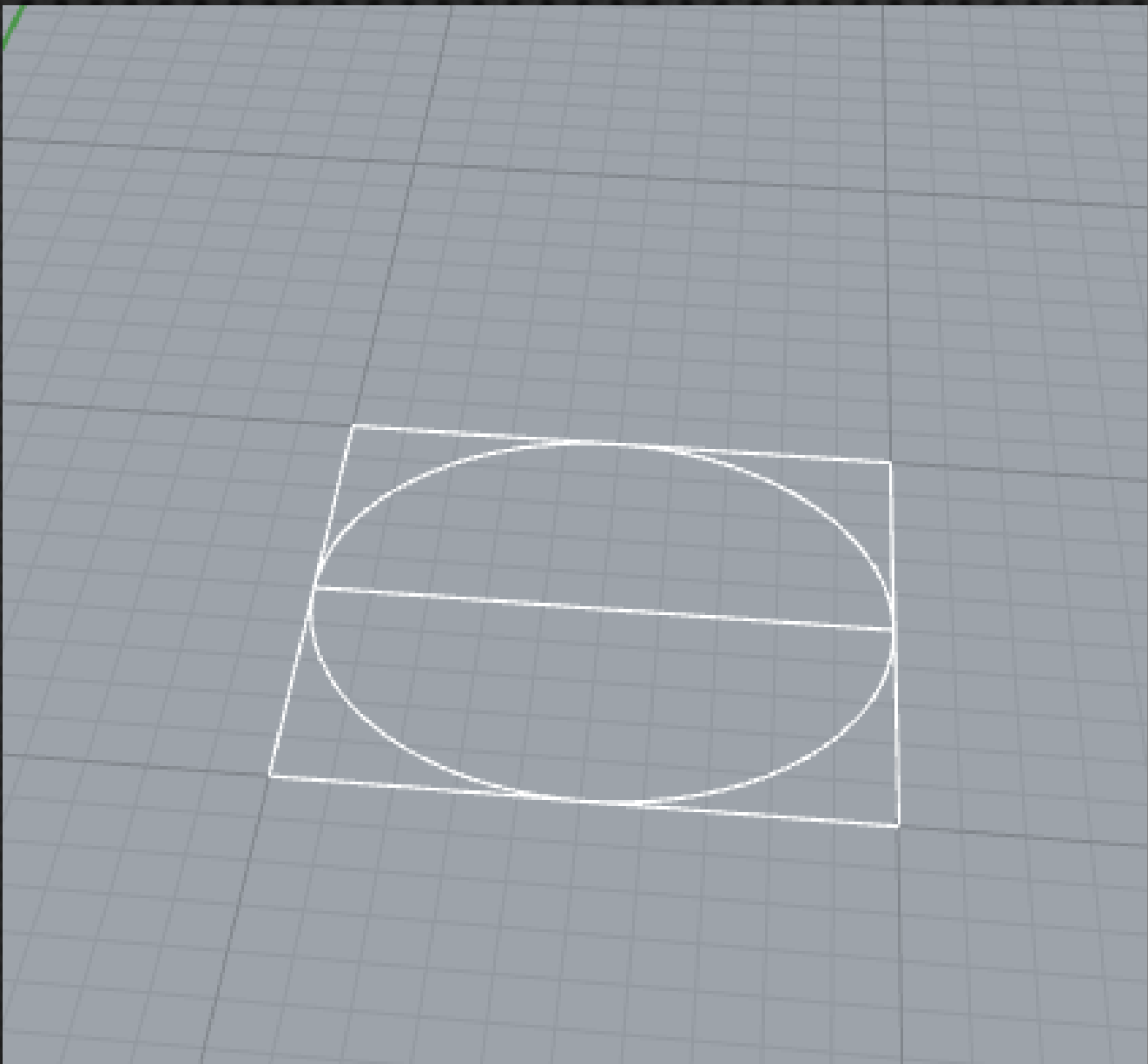


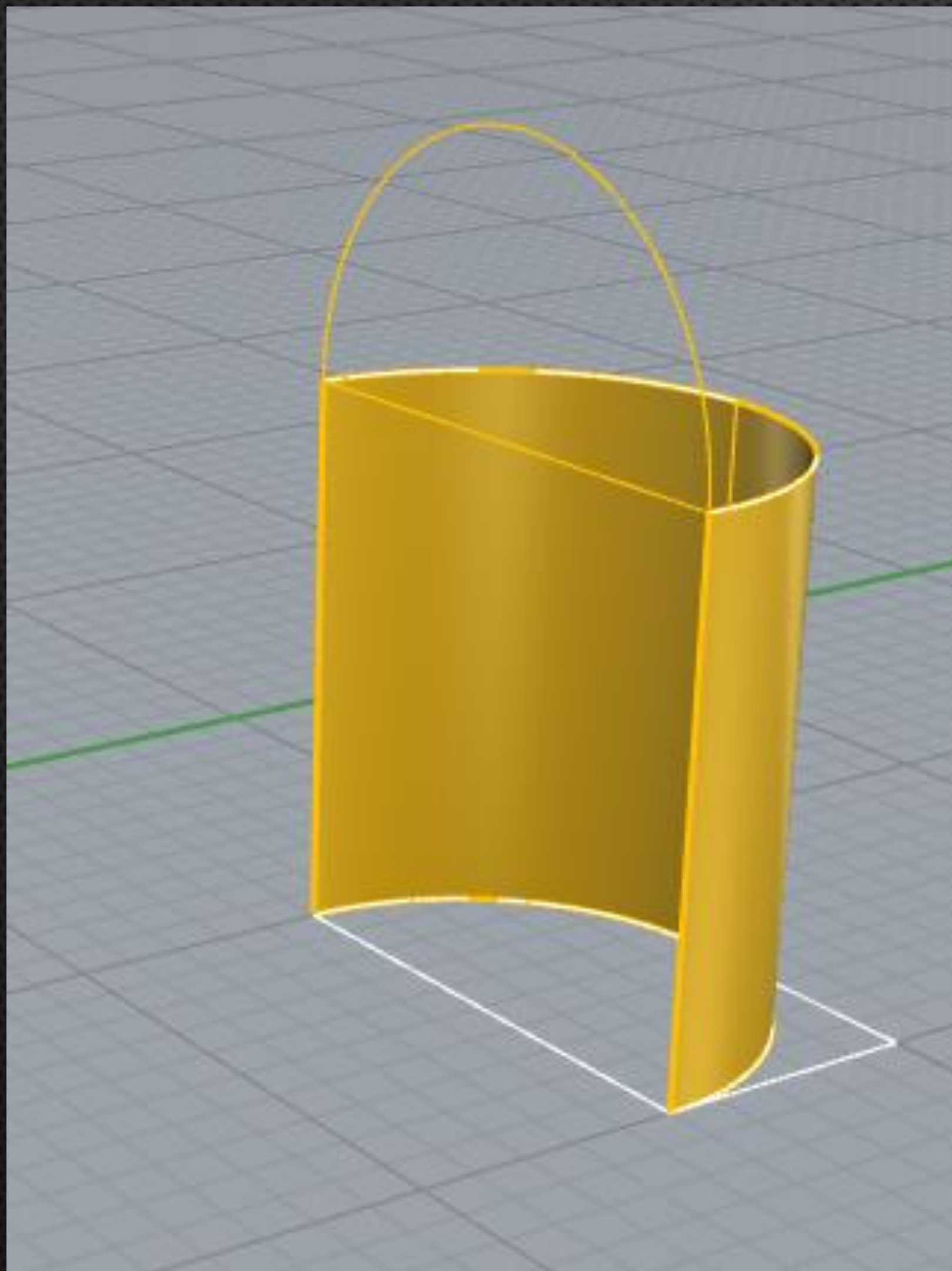
planta
esc 1/2



modelo

5 .Abobada de Forno





Passo 1:

Desenha um arco
semicircular

→ Arc

Passo 2:

Divide o arco em vários
pontos

→ Divide

Passo 3:

Roda o arco em torno do
eixo

→ Rotate

Passo 4:

Repete várias rotações

→ Copy

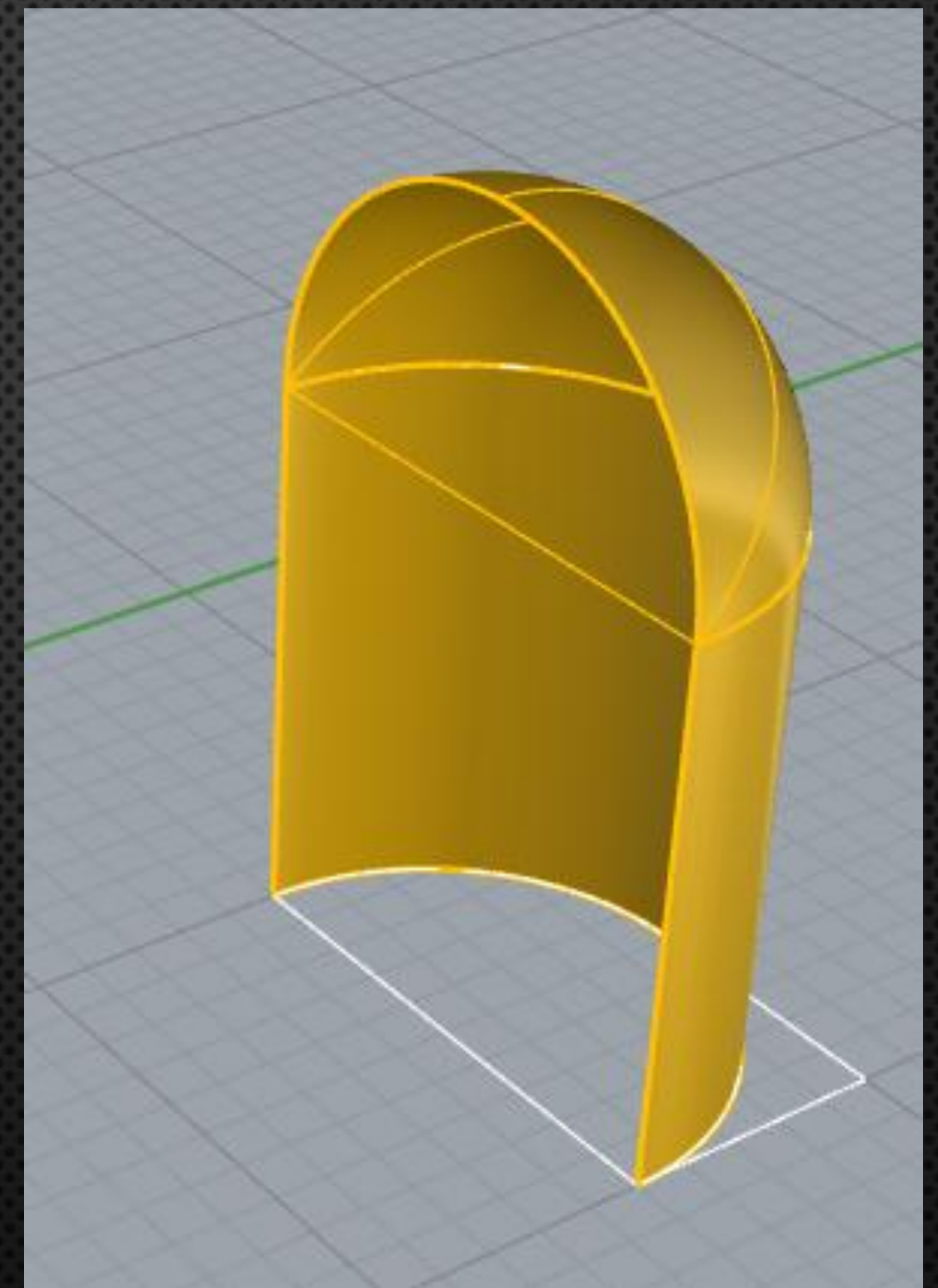
Passo 5:

Cria secções horizontais

→ Circle

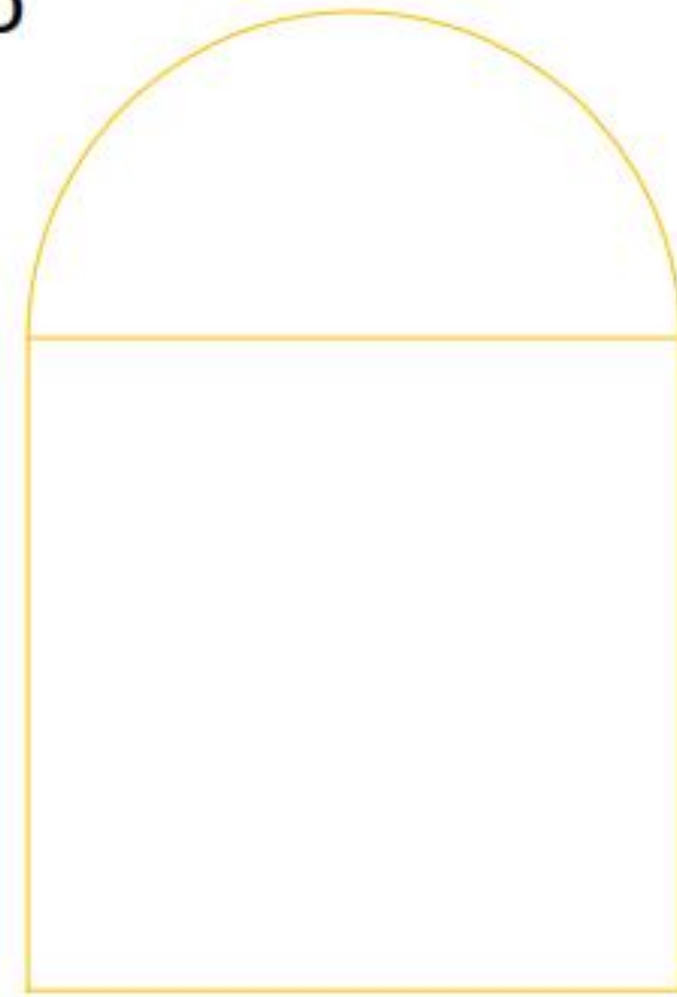
Passo Final:

A rede (meridianos +
paralelos) define a cúpula



Abobada de forno

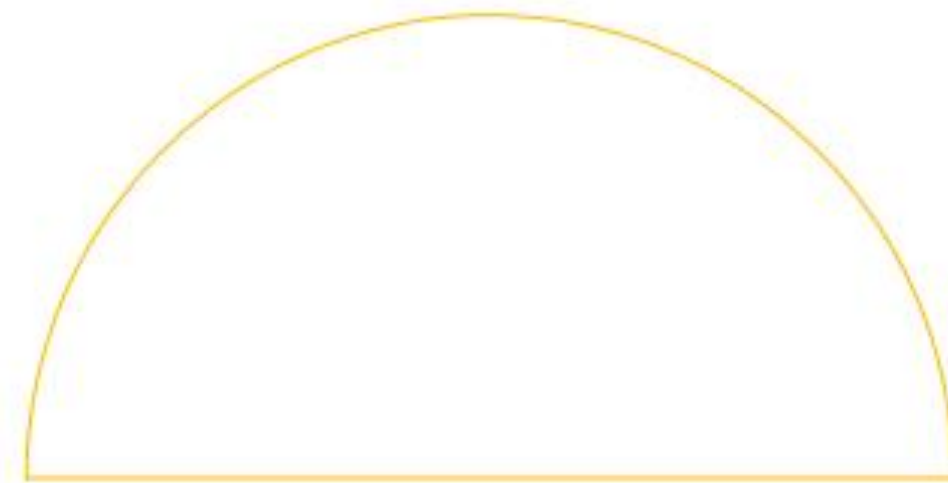
alcado frontal
esc 1/2



alcado lateral
esc 1/2



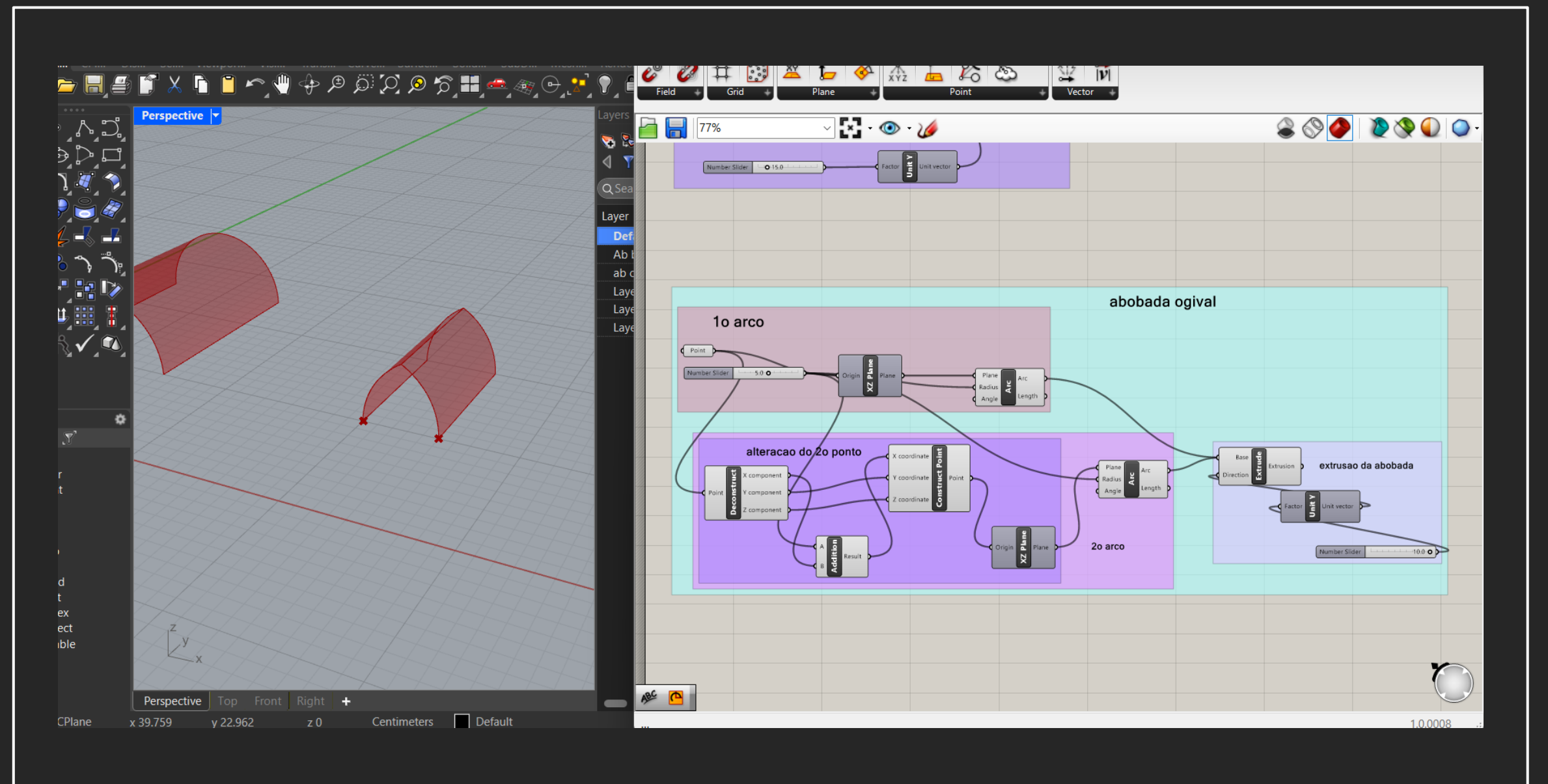
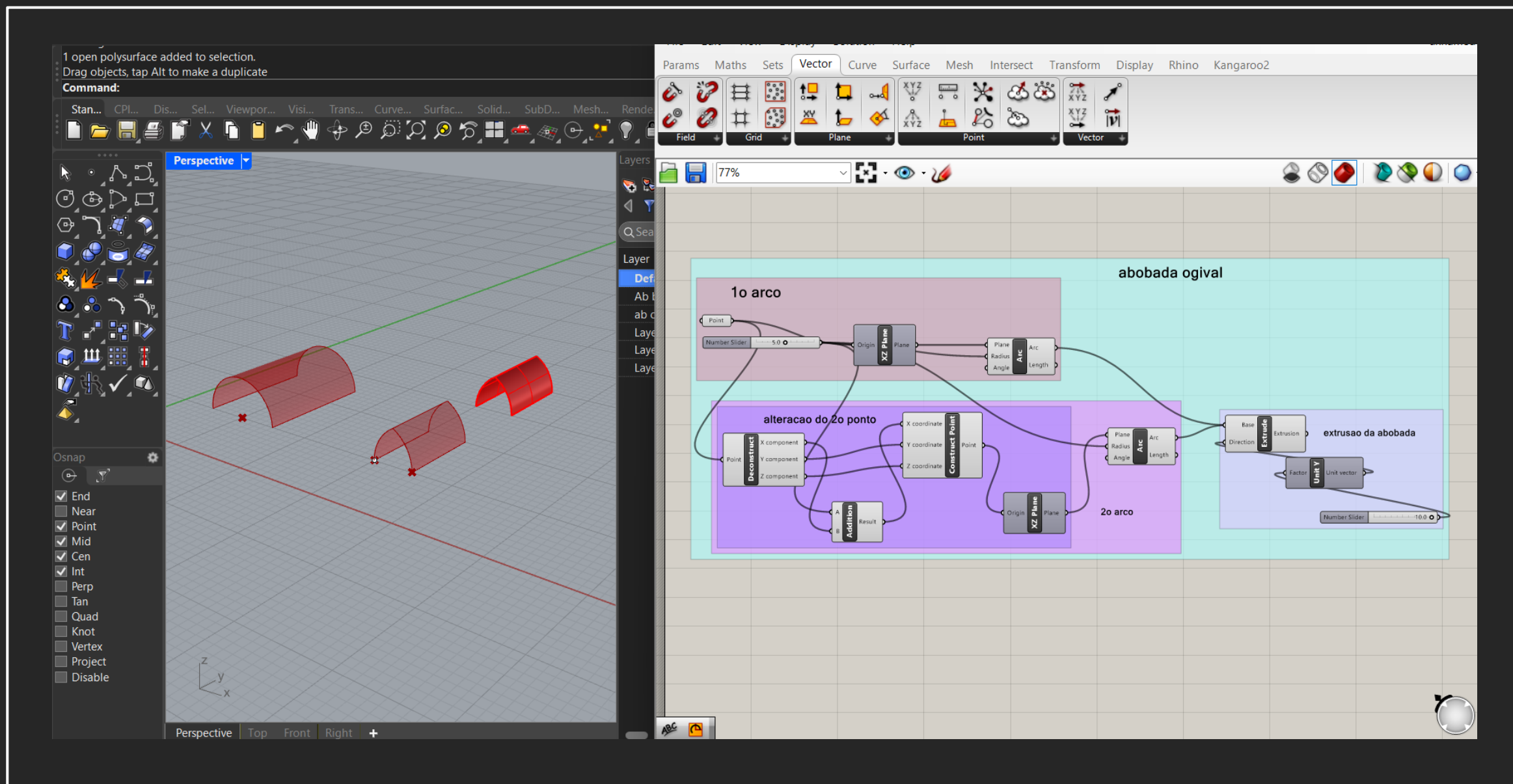
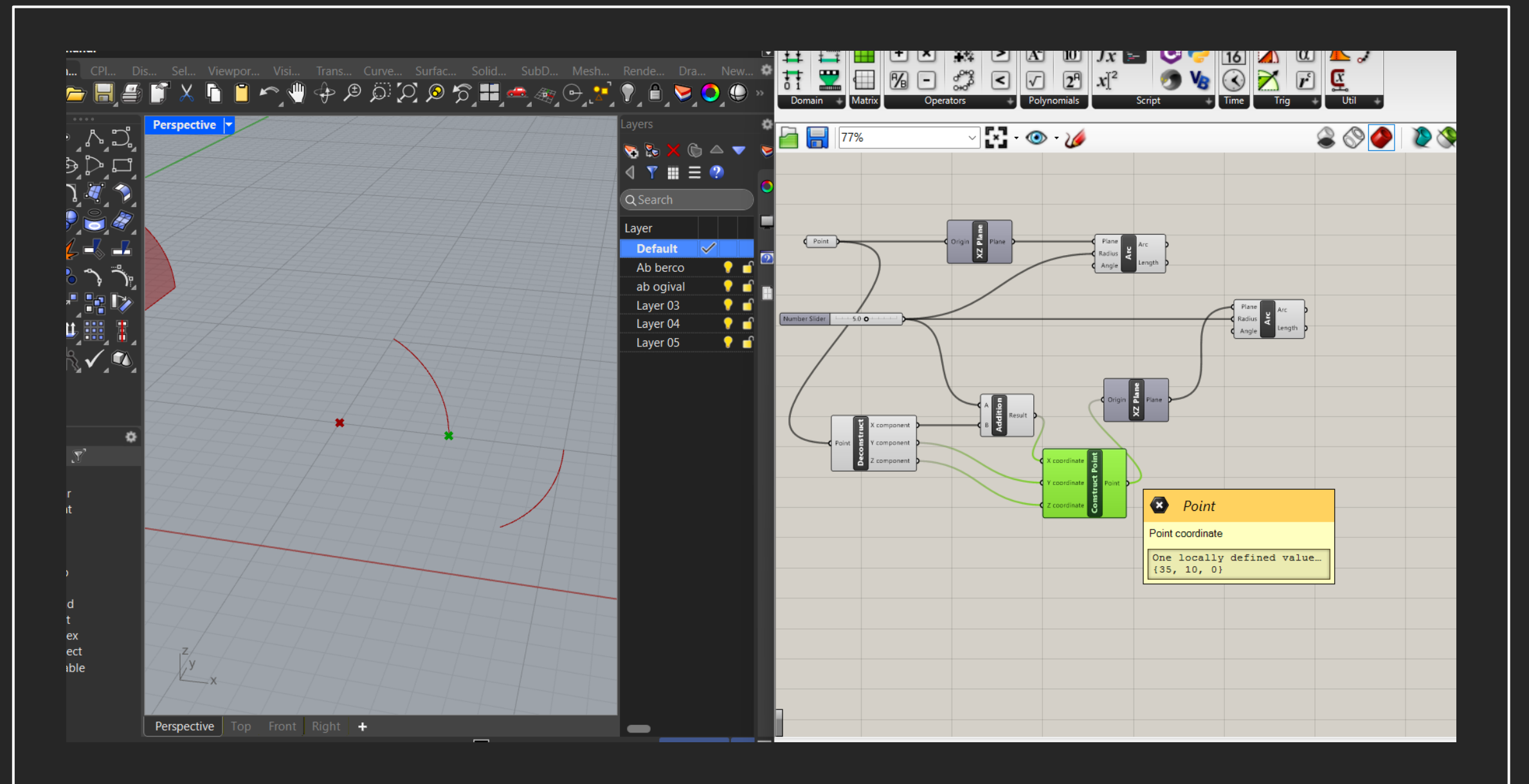
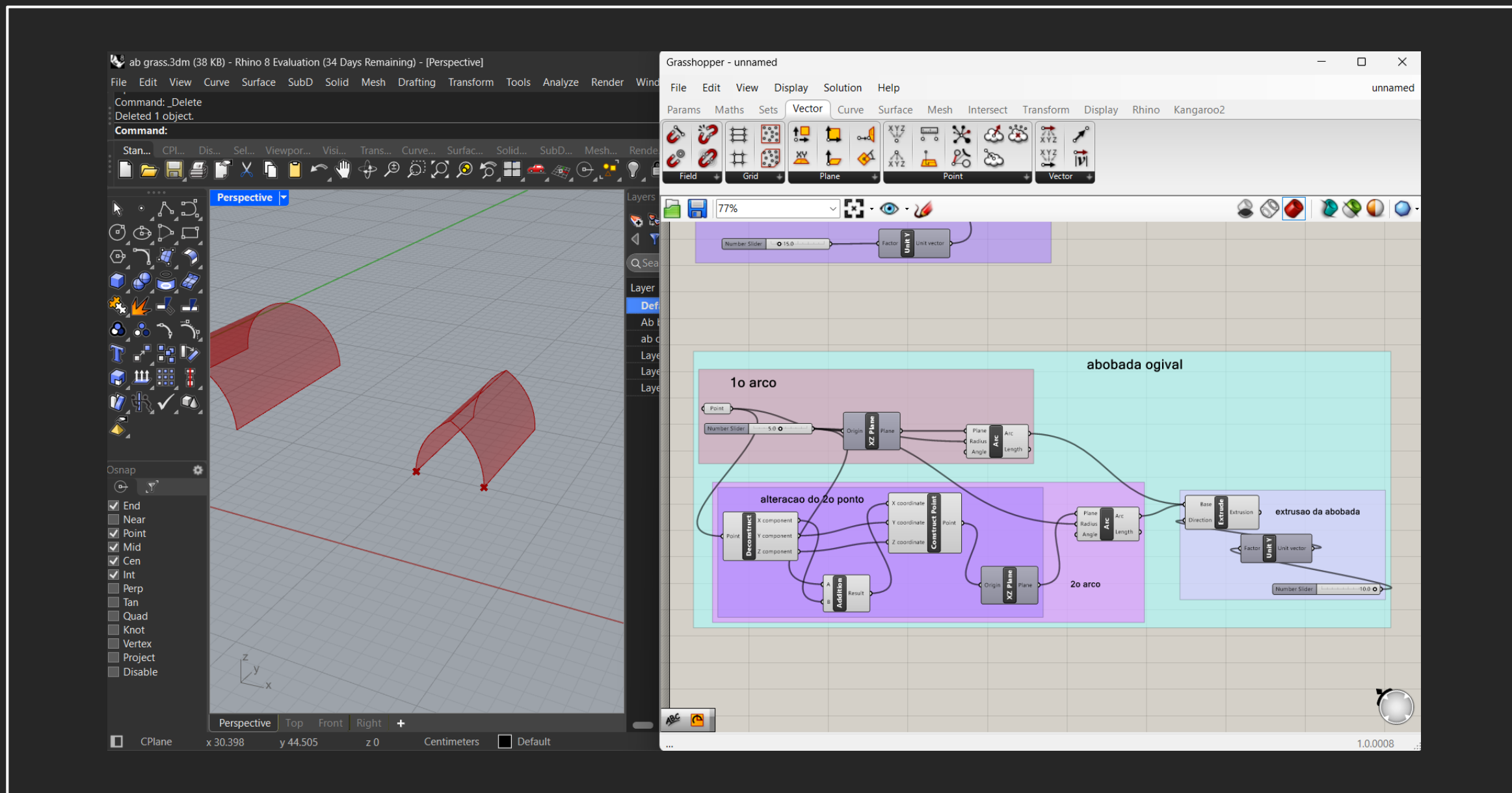
planta
esc 1/2



modelo

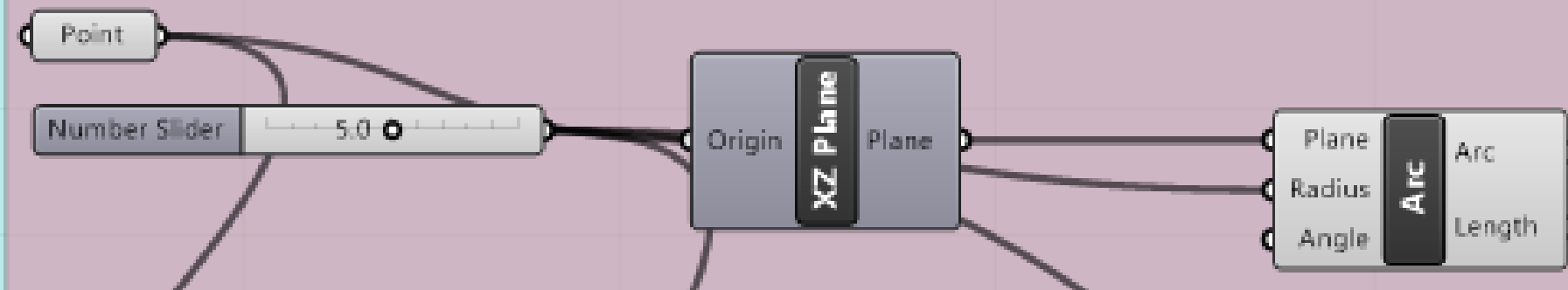


6. Abobada Ogival

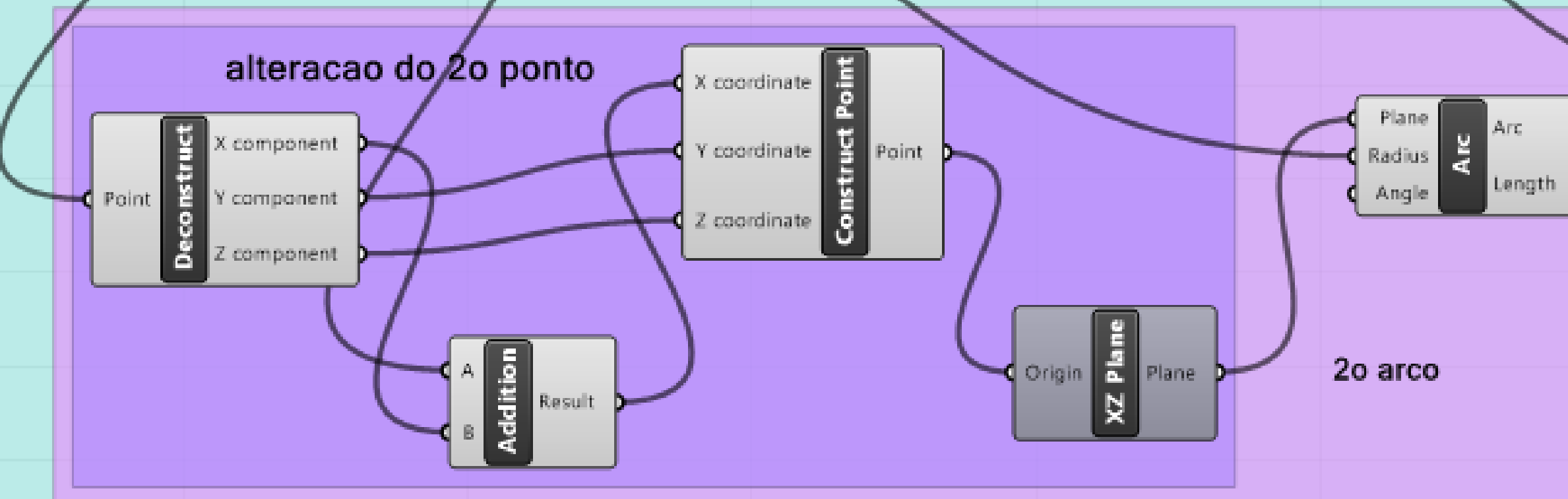


abobada ogival

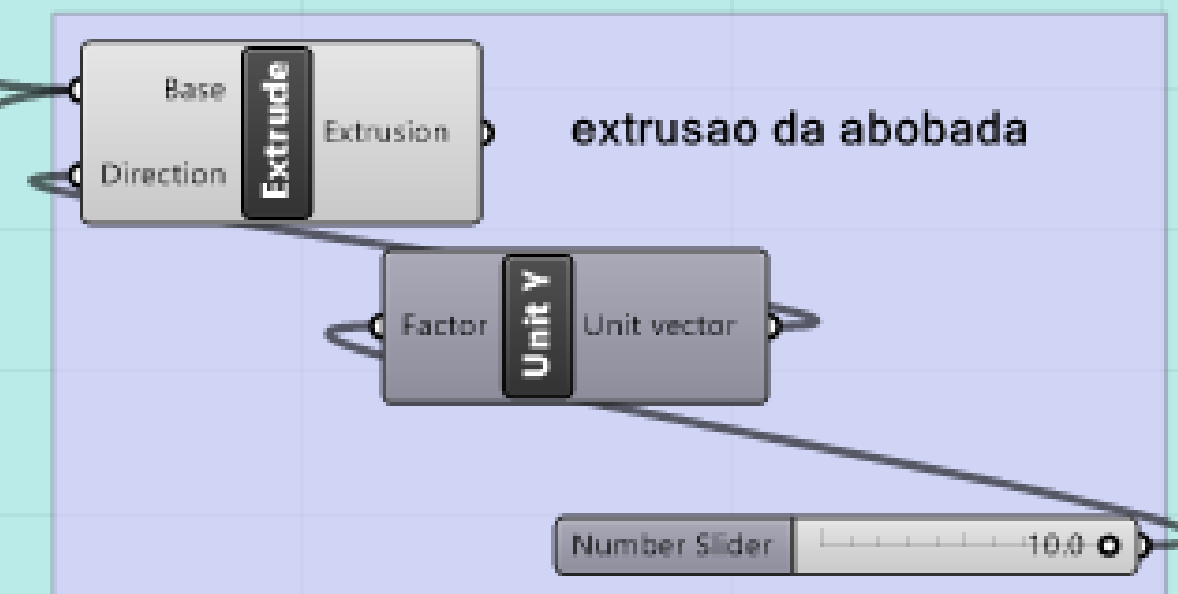
1o arco



alteracao do 2o ponto



2o arco



extrusao da abobada

FIM DO TRABALHO 2