

Modelação Geométrica e Generativa

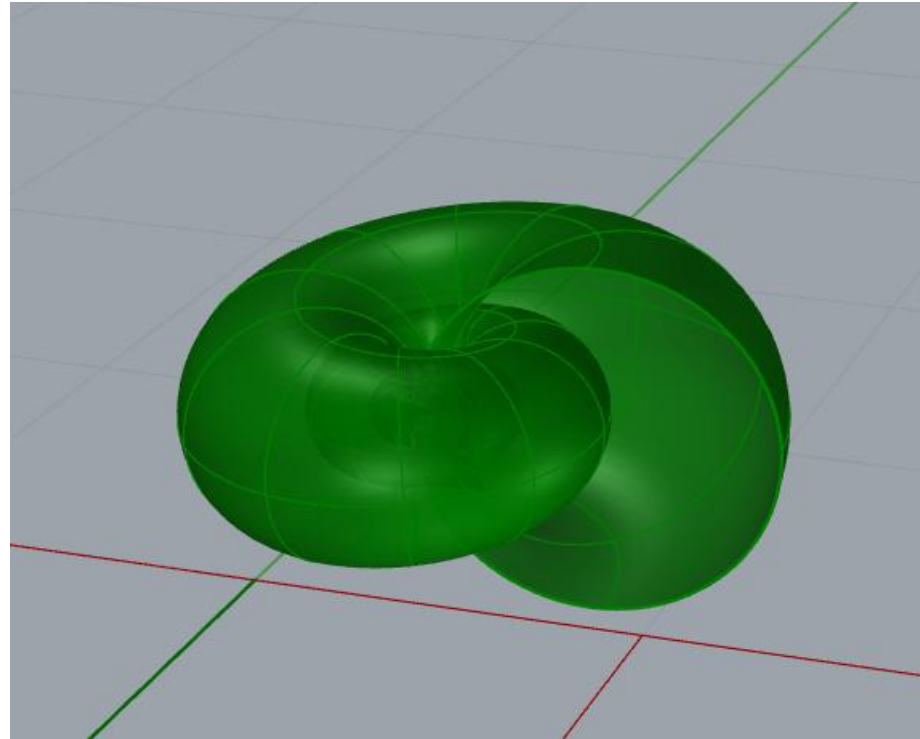


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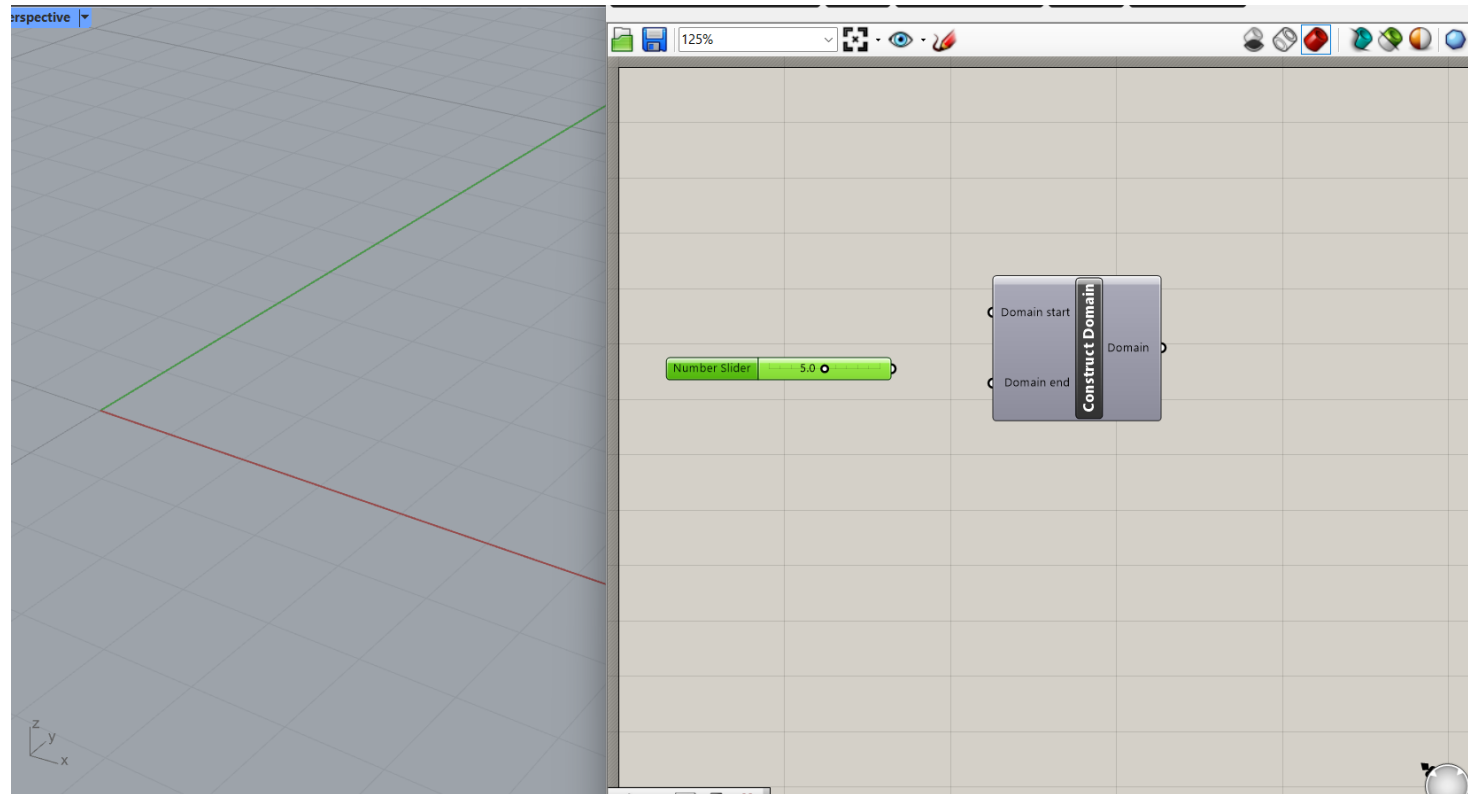


ARIANA BAPTISTA

Nautilus em Grasshopper

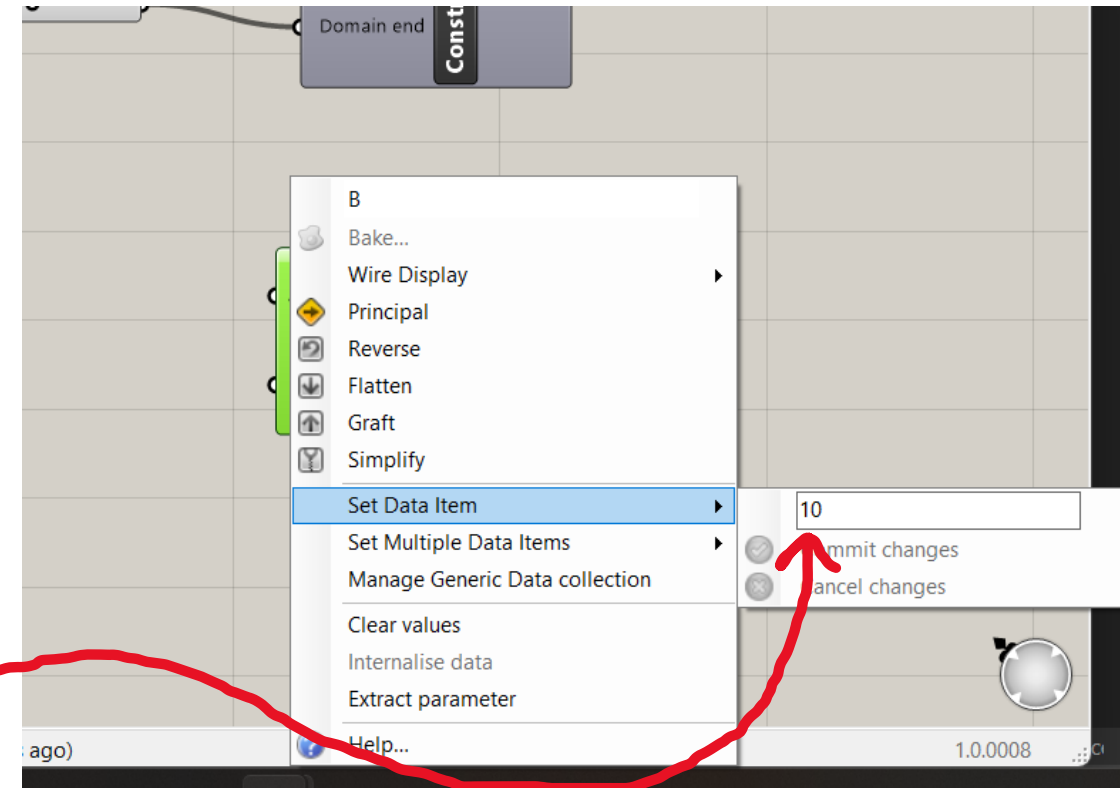
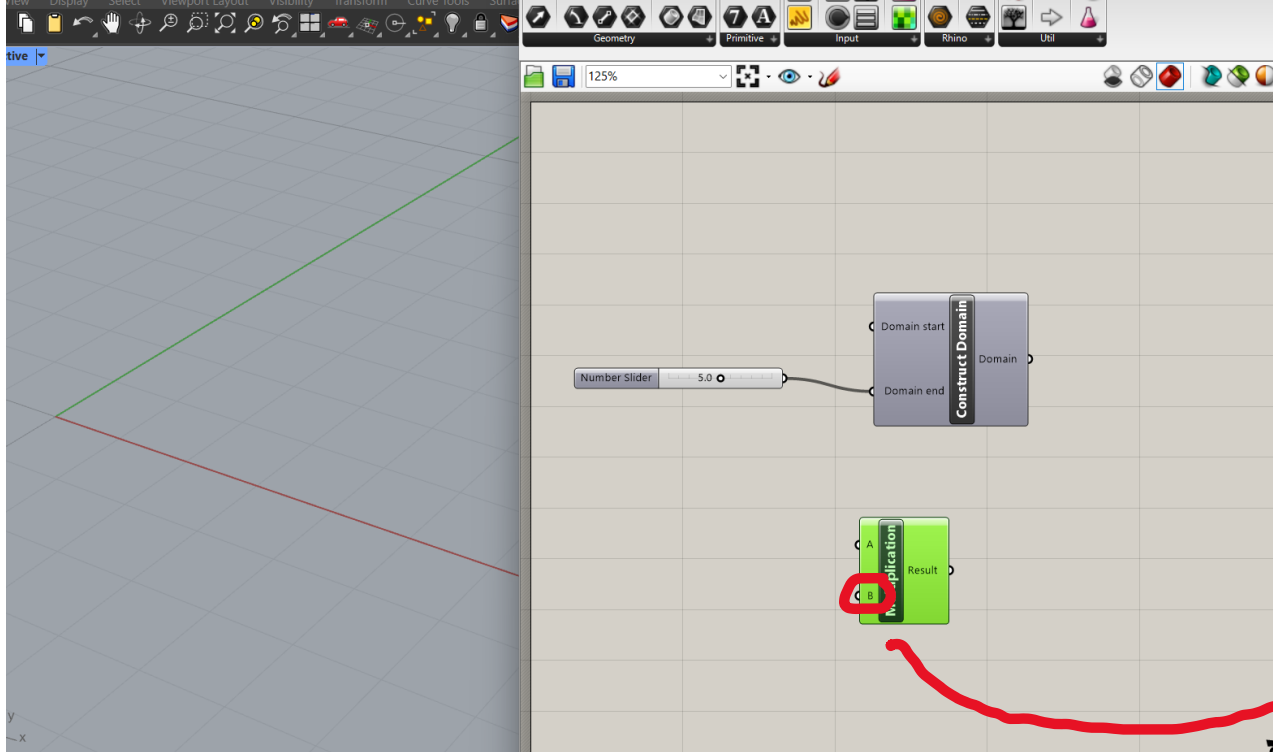


Nautilus em Grasshopper.



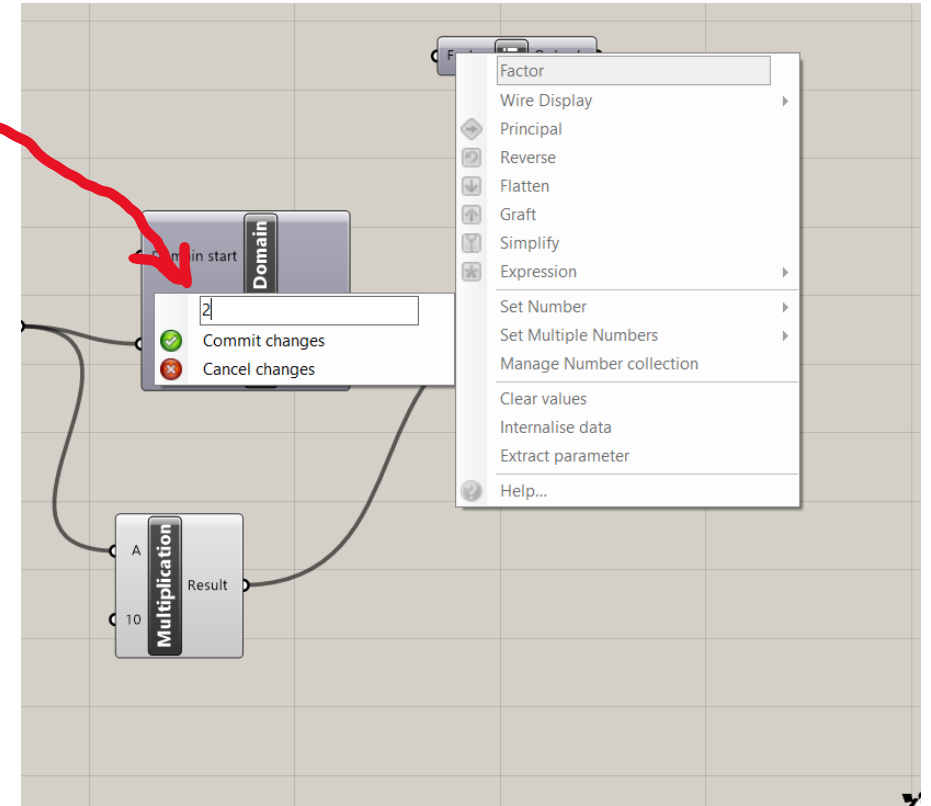
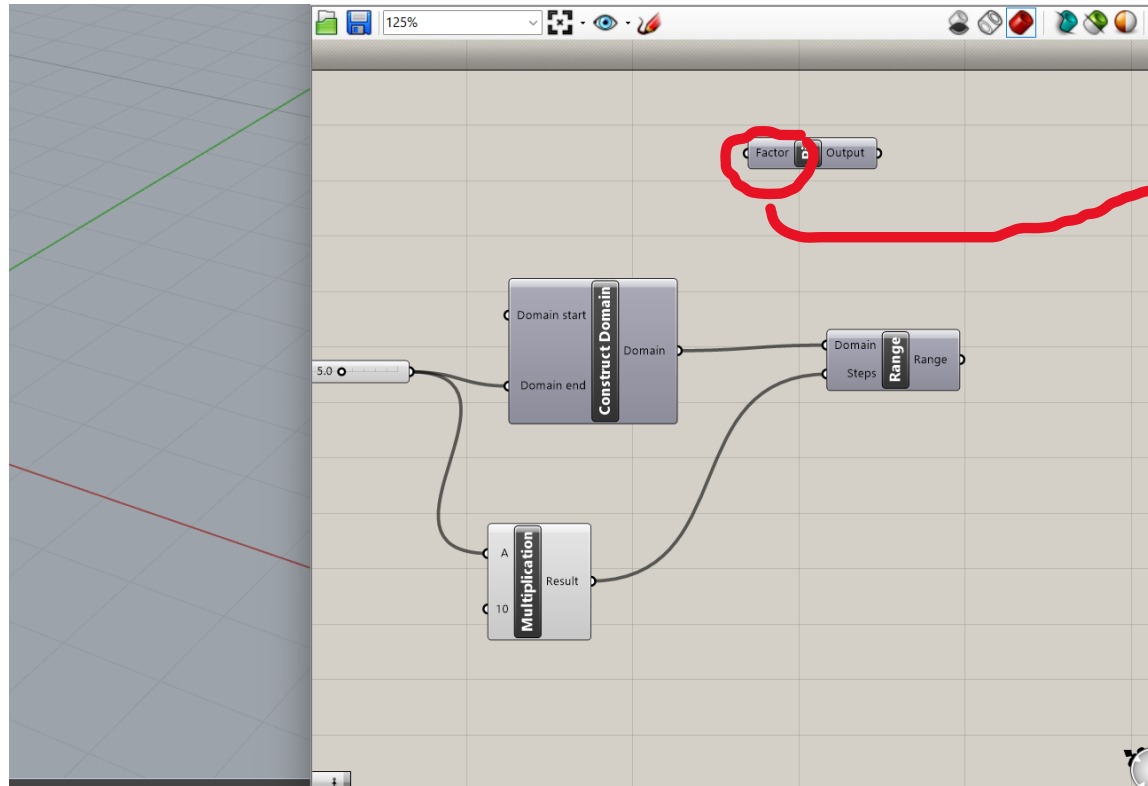
1. Começa-se com o comando “Construct Domain”, juntamente com slider que determina a sua dimensão.

Nautilus em Grasshopper.



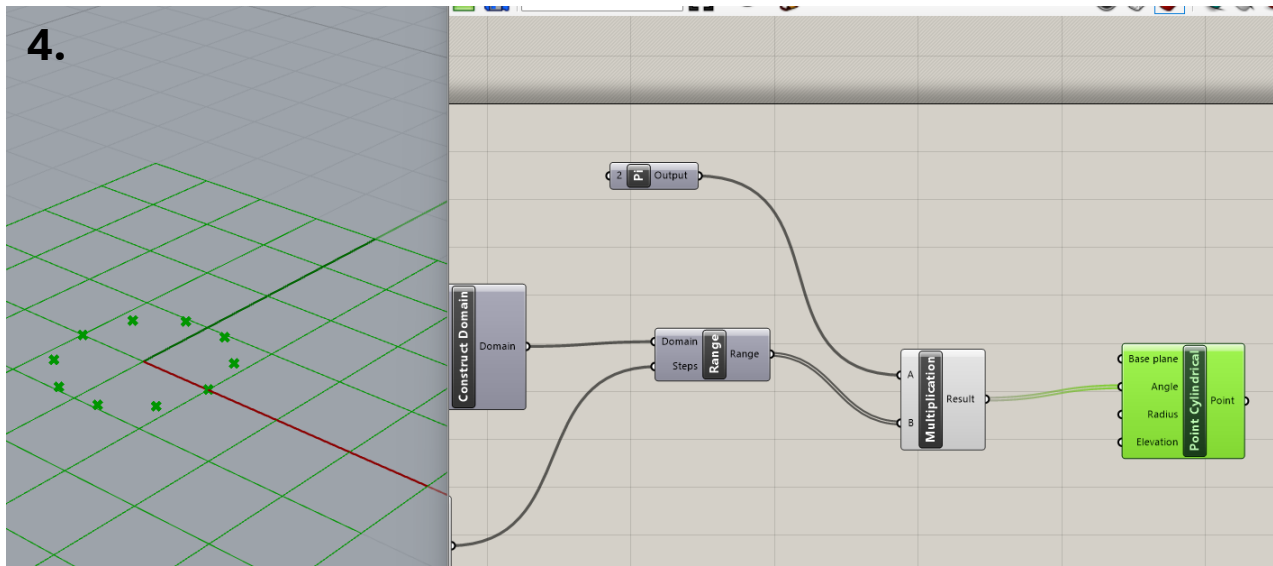
2. Adicionar “Multiplication”, e alterar o “B”, no “Set Data Item” para 10.

Nautilus em Grasshopper.



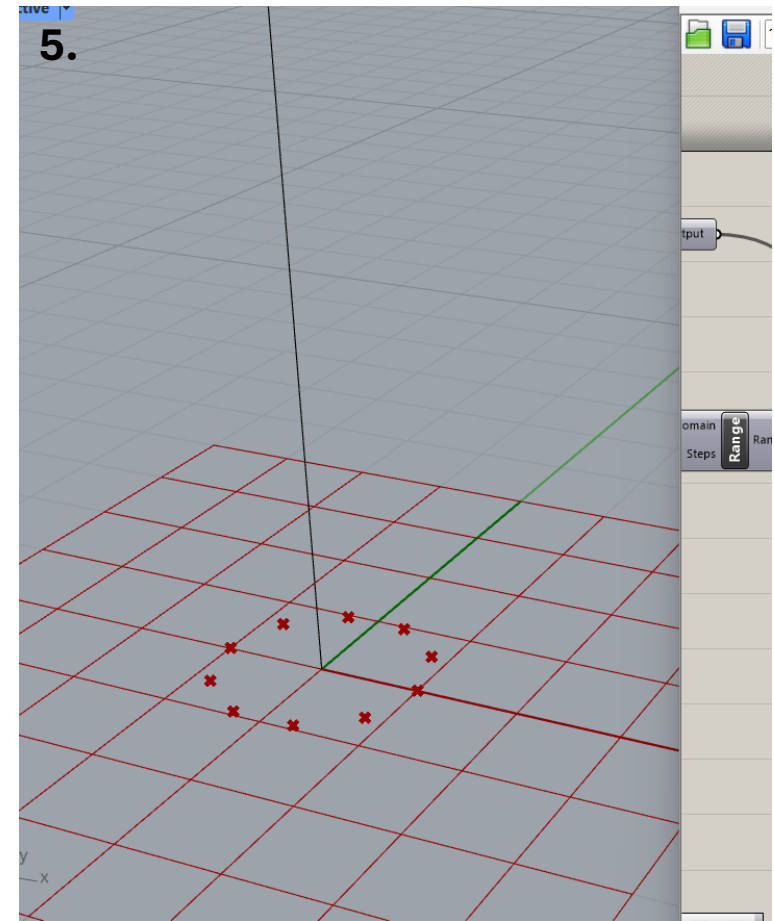
3. Adicionar “Range” e “Pi”, mudando o “Factor” para 2.

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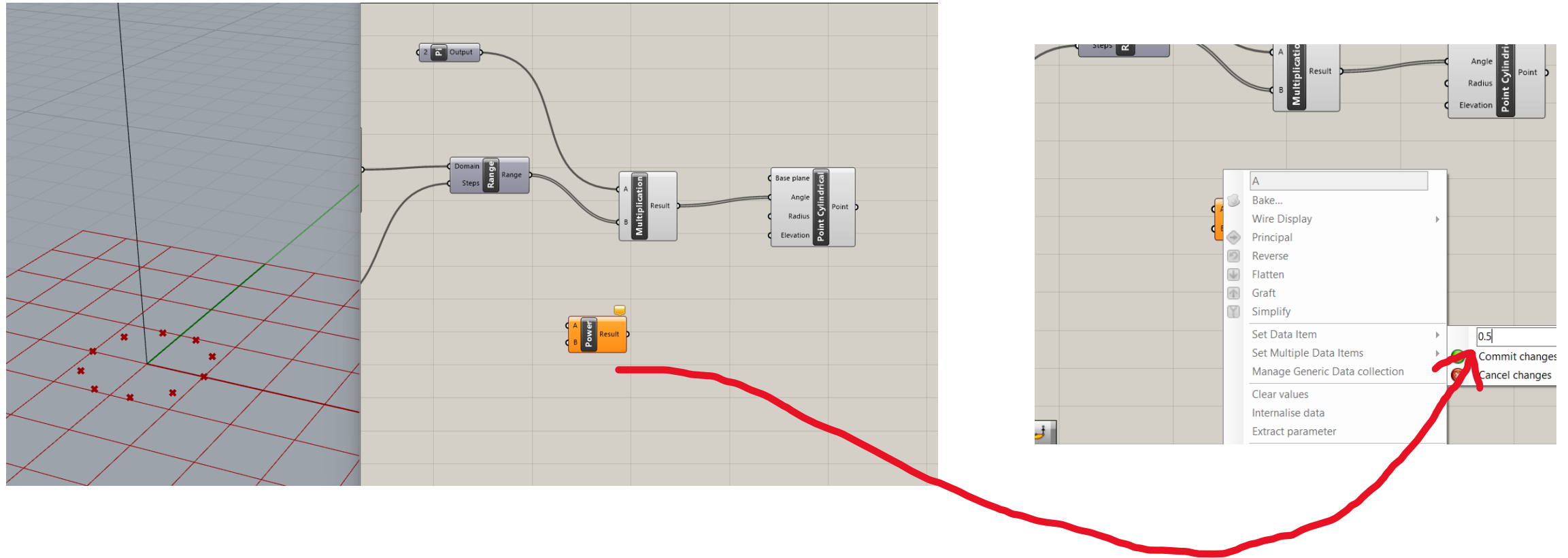


4. Adicionar “Multiplication” e “Point Cylindrical” e assim conseguir editar as características da forma a ser construída.

5. Fazer uma linha vertical no centro da circunferência.



Nautilus em Grasshopper.



6. Adicionar “Power” que permitirá dar forma e alterar a posição “A” para 0.5.

The image displays a 3D visualization of a point cloud and its corresponding node-based programming interface.

3D Visualization (Left): A red grid plane is shown in a 3D space. A cluster of red 'x' marks is centered on the plane. A green line extends from the cluster, and a black line connects the cluster to the origin. The background is a light gray grid.

Node-based Interface (Right): The interface consists of several nodes connected by lines:

- Domain Steps:** A node with a 'Domain' input and a 'Steps' output.
- Range:** A node with a 'Range' input and a 'Range' output.
- Multiplication:** A node with two inputs, 'A' and 'B', and a 'Result' output.
- Power:** A node with a 'Power' input (set to 0.5) and a 'Result' output.
- Point Cylindrical:** A node with inputs for 'Base plane', 'Angle', 'Radius', and 'Elevation', and a 'Point' output.

The connections are as follows:

- The 'Domain Steps' node is connected to the 'Range' node.
- The 'Range' node is connected to the 'Multiplication' node (input A) and the 'Power' node (input B).
- The 'Power' node is connected to the 'Multiplication' node (input B).
- The 'Multiplication' node is connected to the 'Point Cylindrical' node (input Angle).
- The 'Point Cylindrical' node is connected to the 'Point' output.

The image displays a 3D visualization of a point cloud and its corresponding node-based programming interface.

3D Visualization (Left): A red grid plane is shown in a 3D space. A cluster of red 'x' marks is centered on the plane. A green line extends from the cluster, and a black line connects the cluster to the node-based interface.

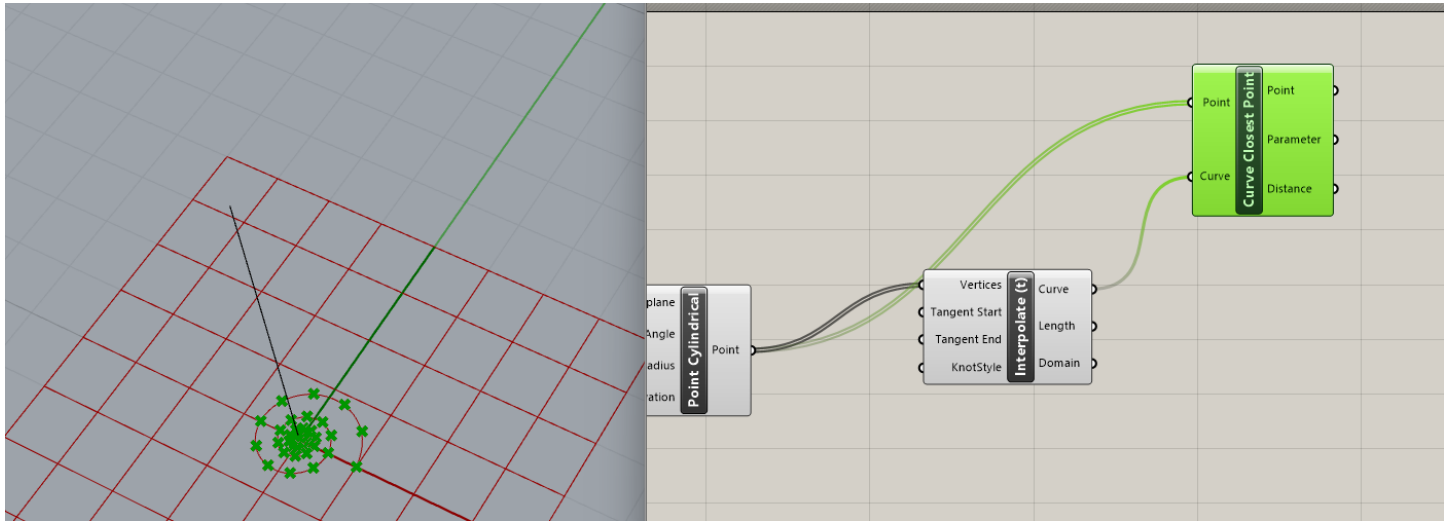
Node-based Interface (Right): The interface consists of several nodes connected by lines:

- Domain Steps:** A node with a 'Domain' input and a 'Steps' output.
- Range:** A node with a 'Range' input and a 'Range' output.
- Multiplication:** A node with two inputs, 'A' and 'B', and a 'Result' output.
- Power:** A node with a 'Power' input (set to 0.5) and a 'Result' output.
- Point Cylindrical:** A node with inputs for 'Base plane', 'Angle', 'Radius', and 'Elevation', and a 'Point' output.

The connections are as follows:

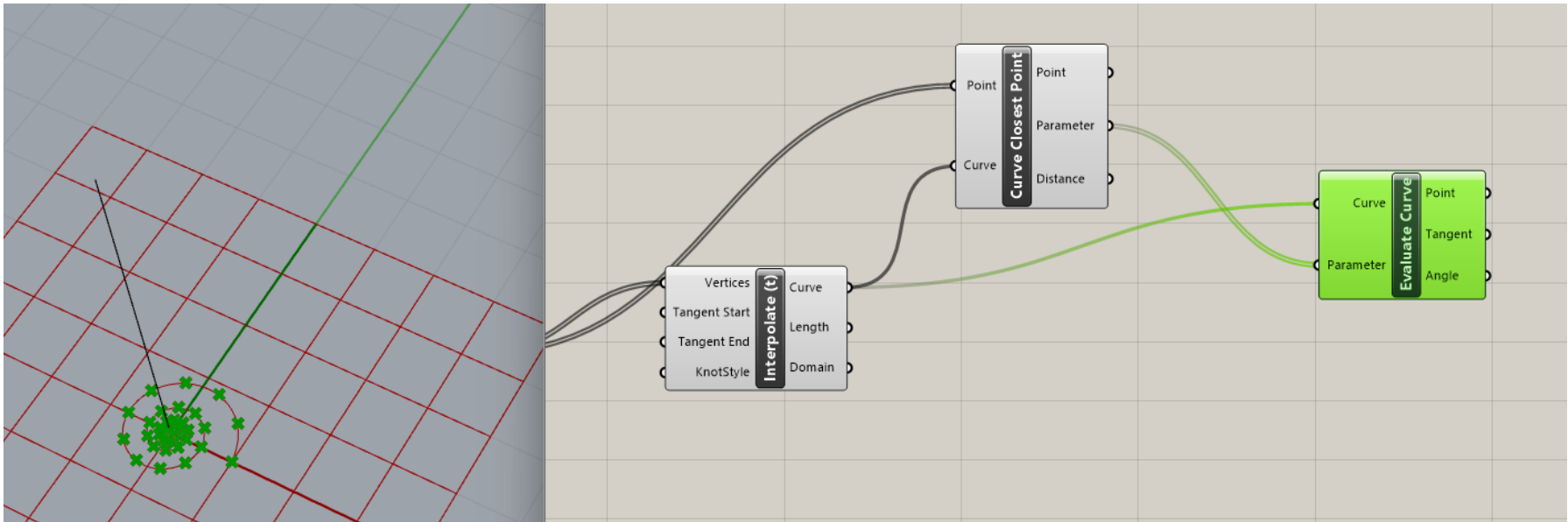
- The 'Domain Steps' node is connected to the 'Range' node.
- The 'Range' node is connected to the 'Multiplication' node (input A) and the 'Power' node (input B).
- The 'Power' node is connected to the 'Multiplication' node (input B) and the 'Point Cylindrical' node (input Elevation).
- The 'Multiplication' node is connected to the 'Point Cylindrical' node (input Angle).
- The 'Point Cylindrical' node is connected to the 'Point' output.

Nautilus em Grasshopper.

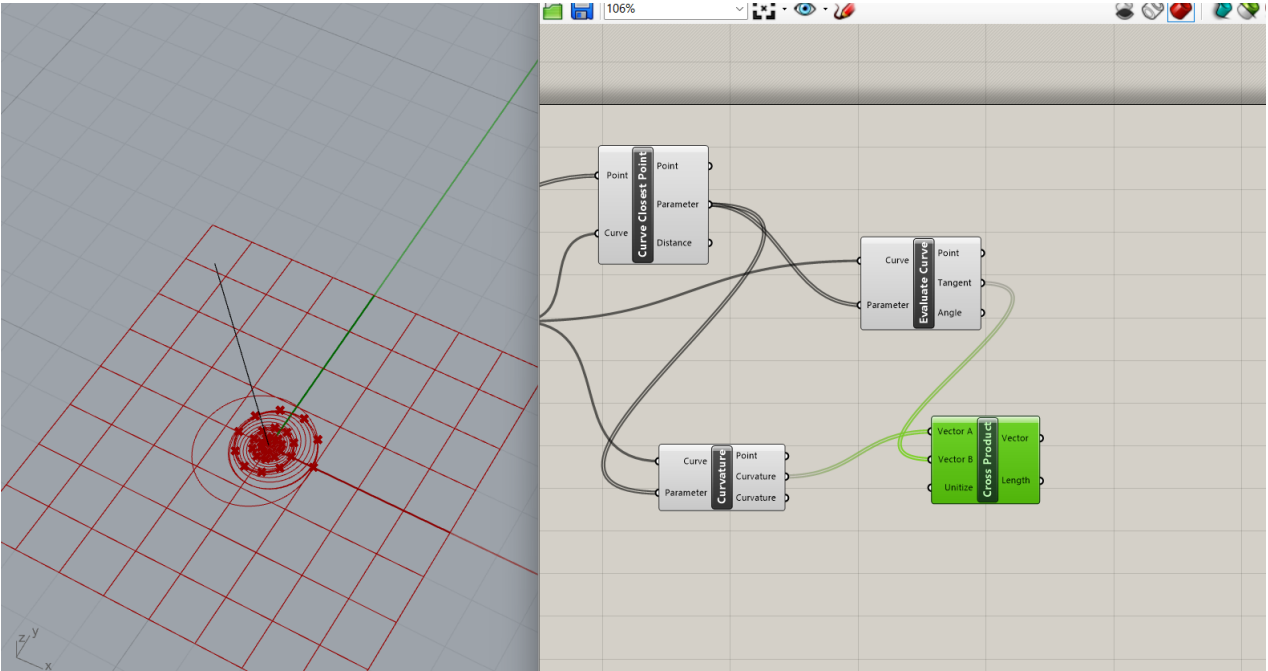
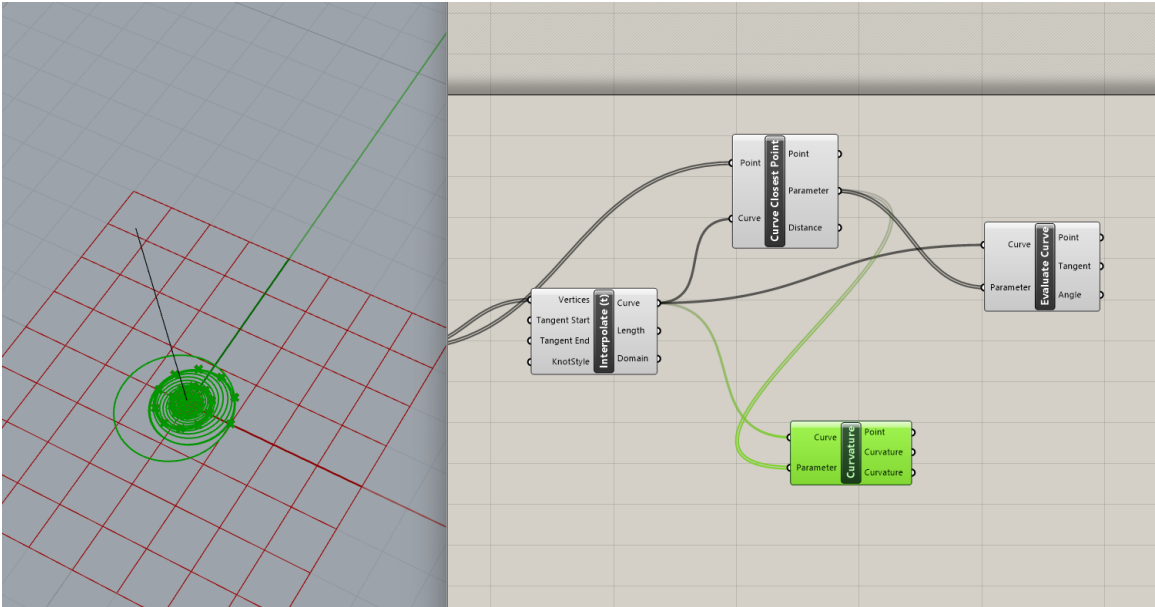


9. Adicionar “Curve Closest Point”.

10. Adicionar “Evaluate Curve”.

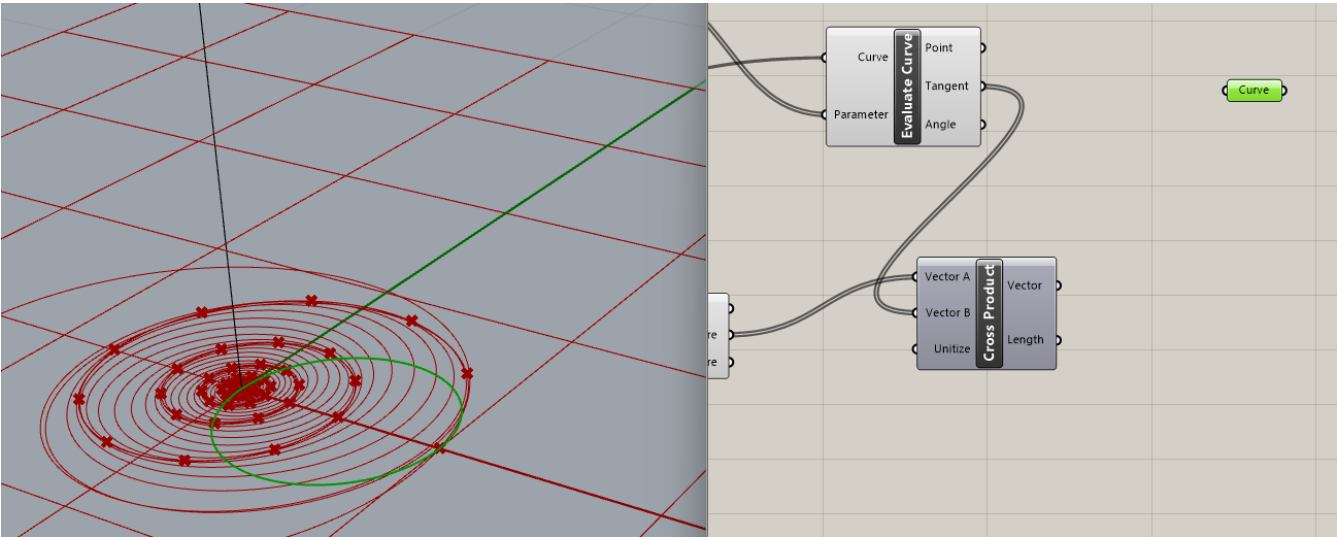


11. Adicionar “Curvature”.



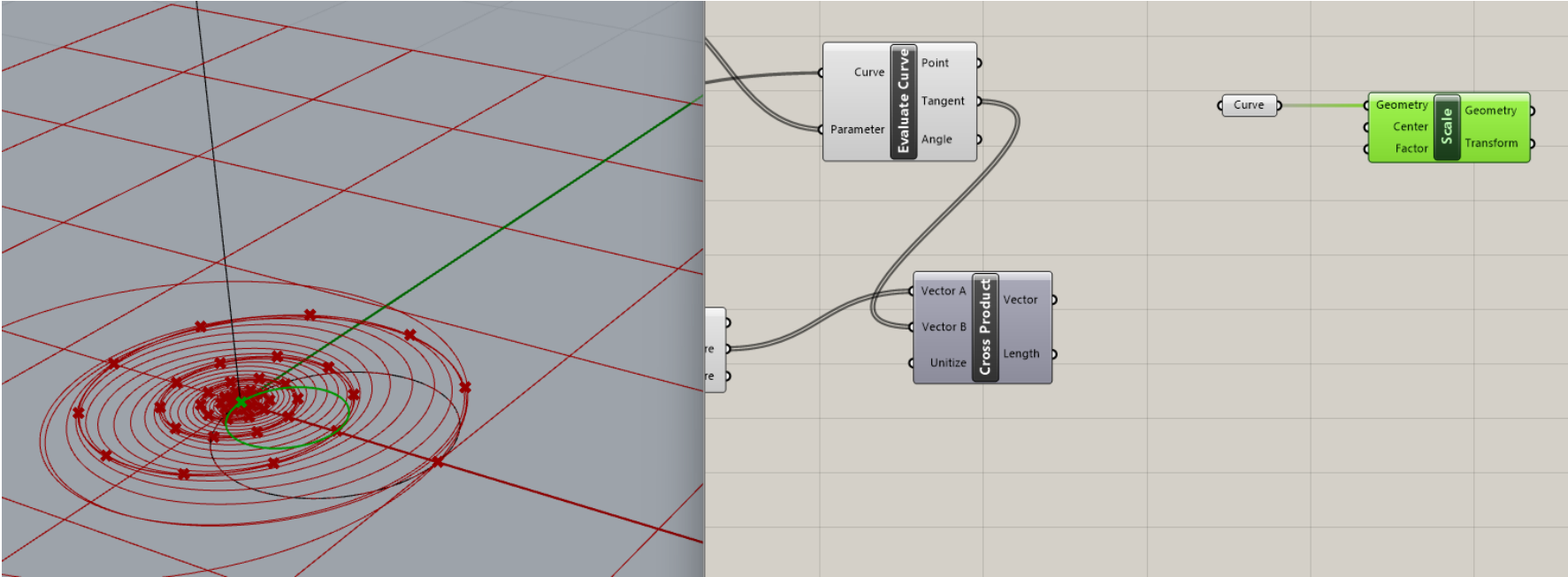
12. Adicionar “Cross Product”.

Nautilus em Grasshopper.

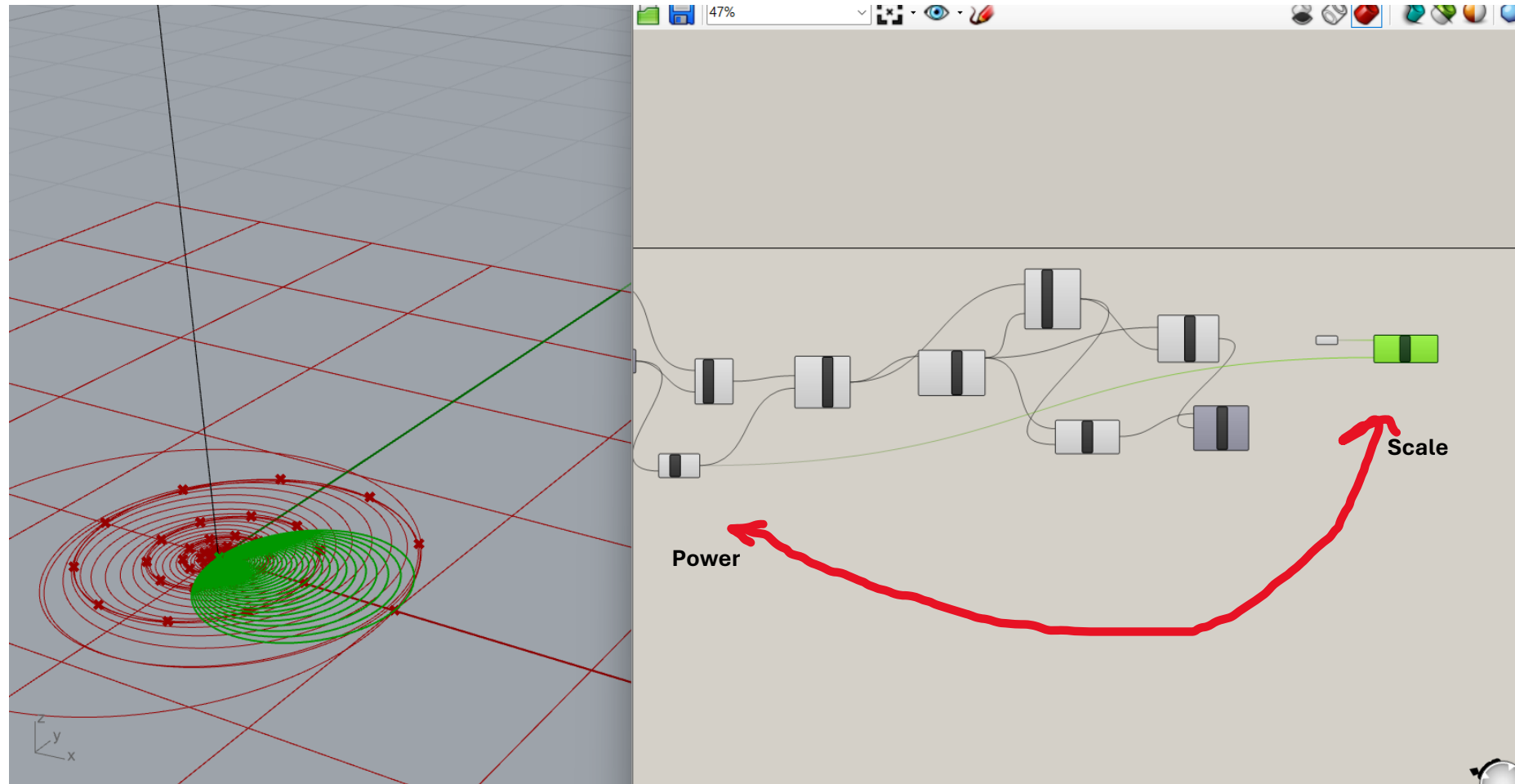


13. Adicionar “Curve”,
juntamente com uma
circunferência no plano e
associá-la no Grasshopper.

14. Adicionar “Scale”.

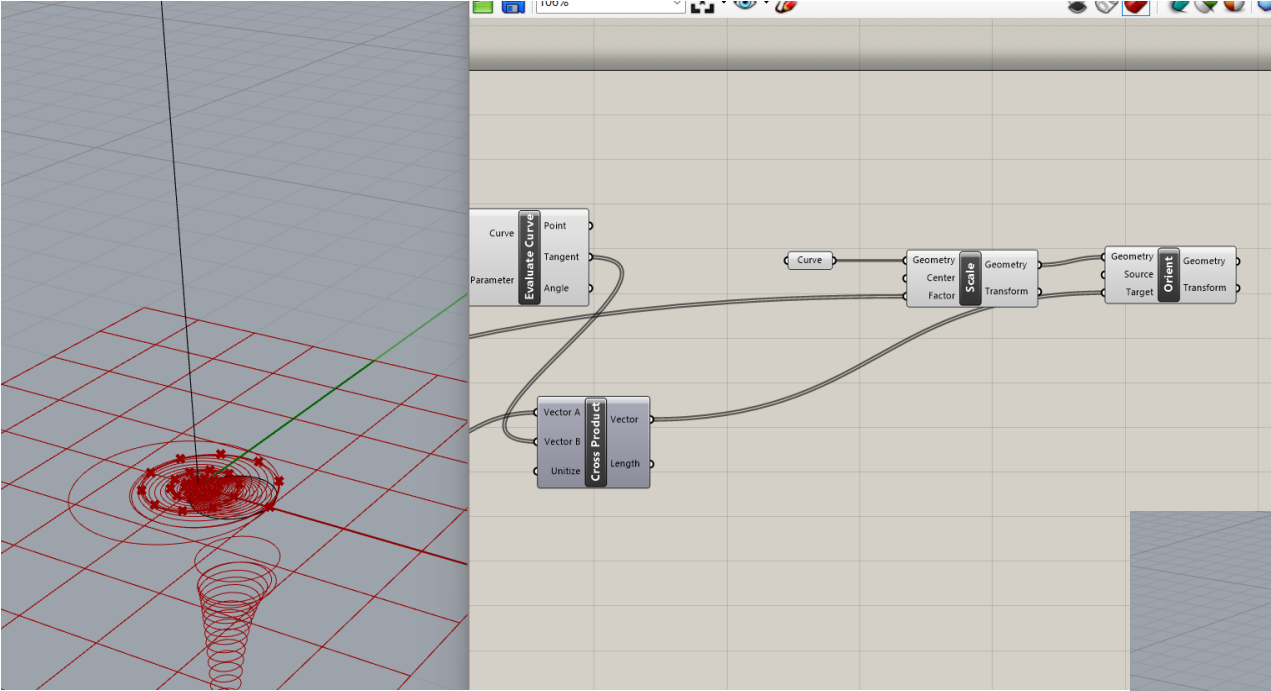


Nautilus em Grasshopper.



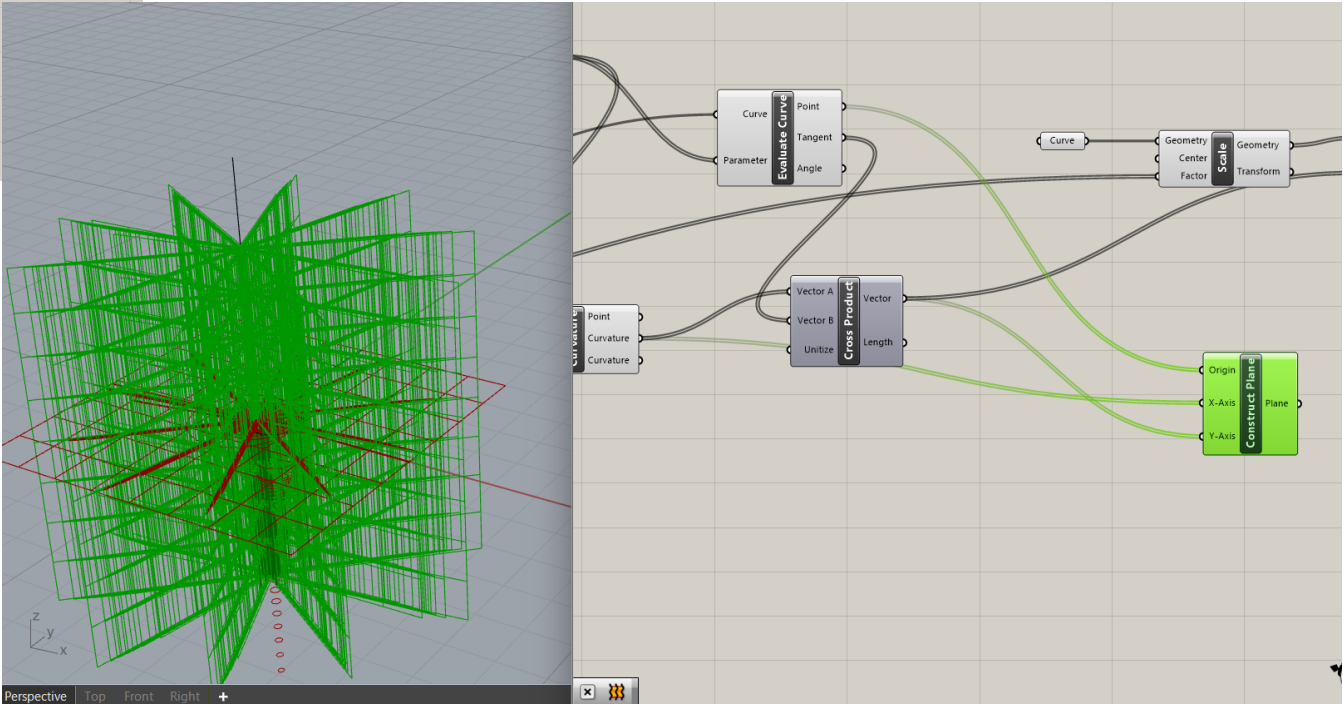
15. Ligar “Scale” a “Power”.

Nautilus em Grasshopper.

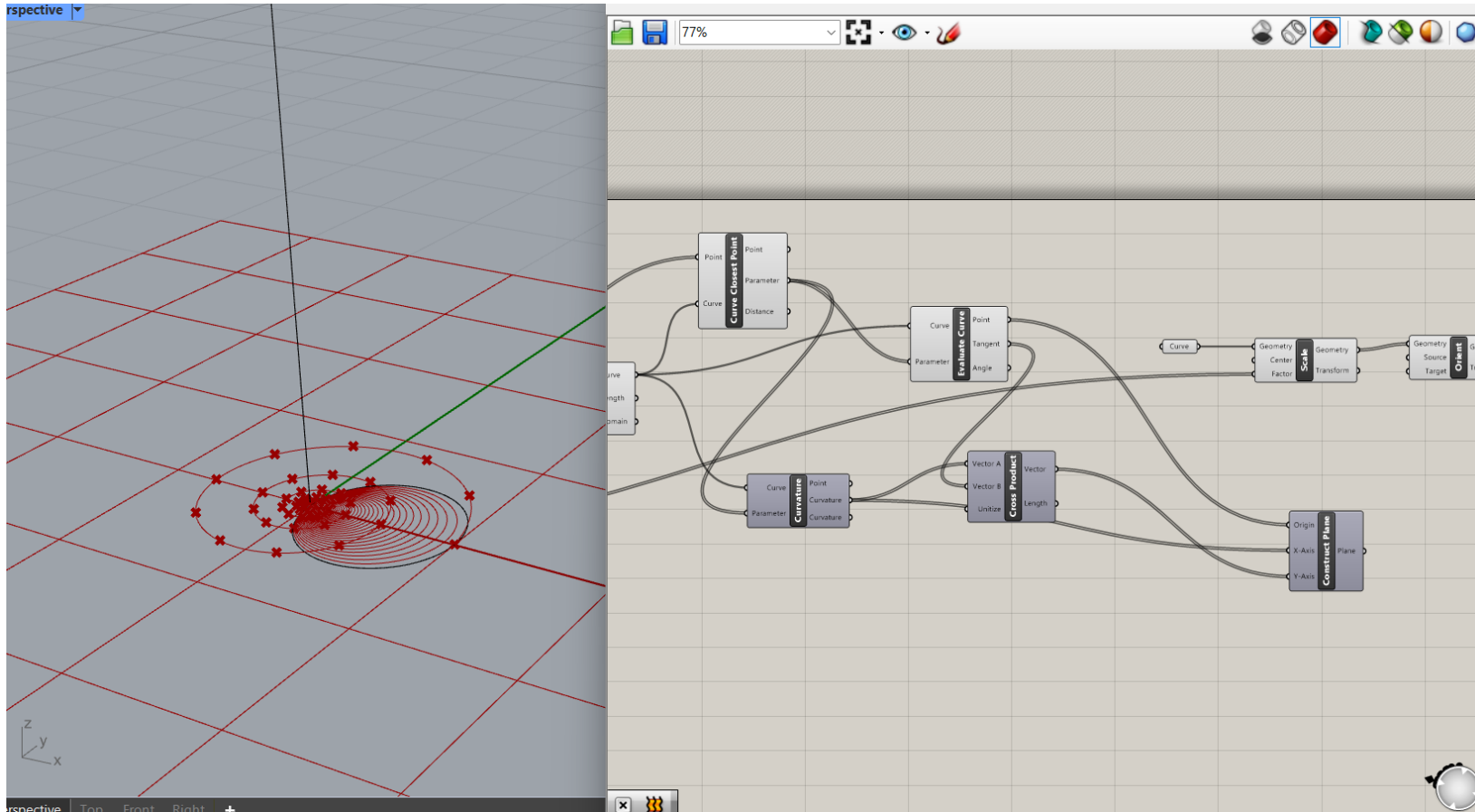


16. Ligar “Orient” a “Scale” e Cross Product”.

17. Ligar “Construct Plane” a “Evaluate Curve” (Point-Origin); “Curve Product” (Vector-Y-Axis); “Curvature” (Curvature-X-Axis).

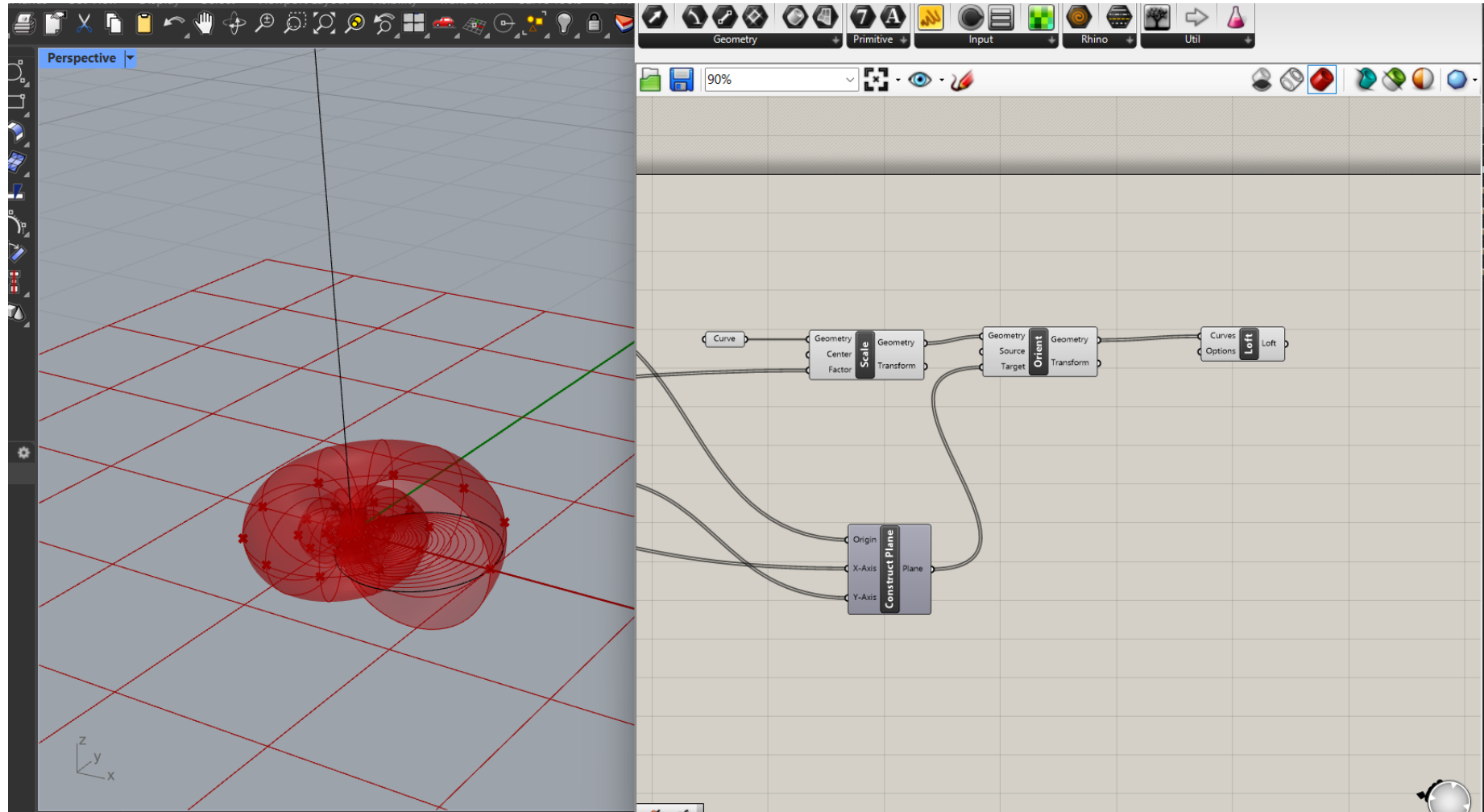


Nautilus em Grasshoper.

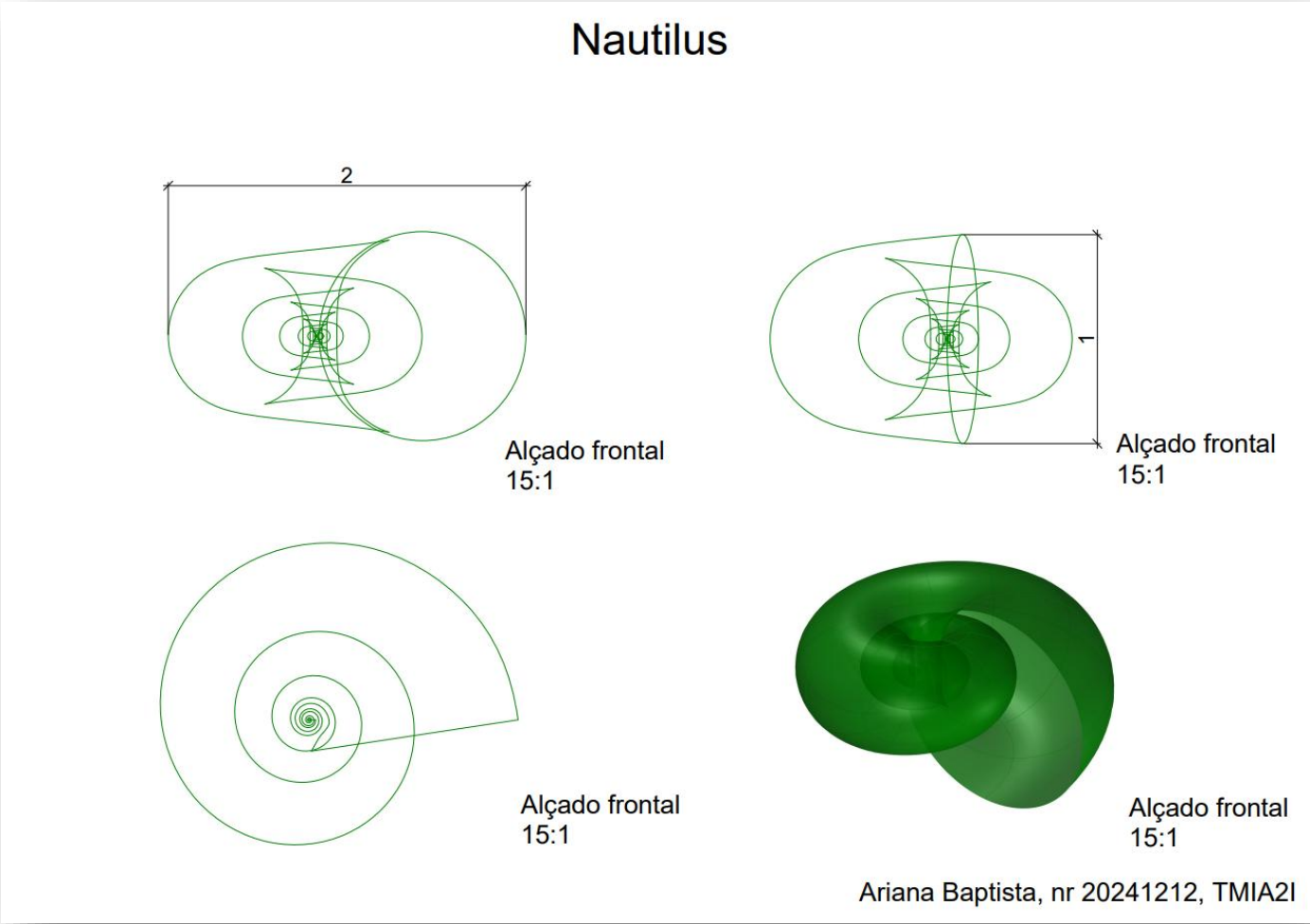


18. Fazer “Preview” de “Curvature”, “Curve Product” e “Construct Plane

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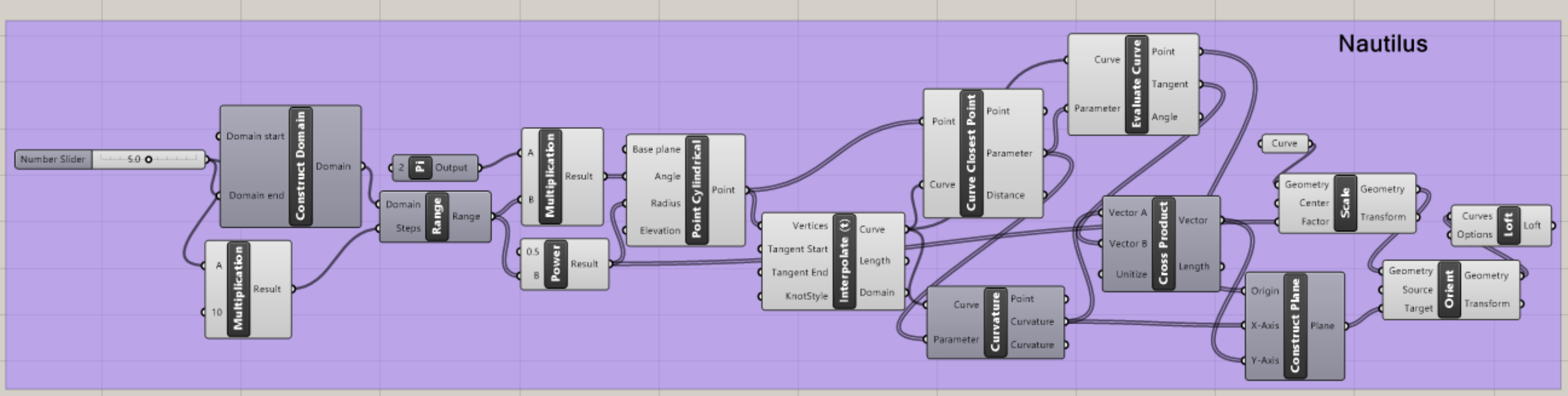


19. “Loft” permite finalizar o molusco ao unir com “Orient”.

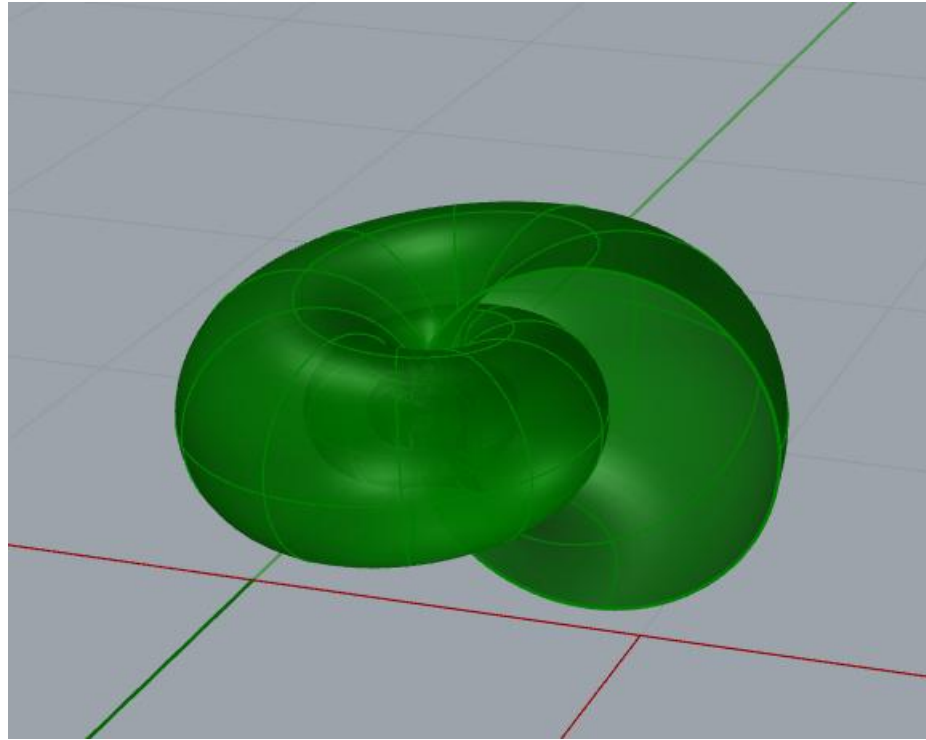


Layout Nautilus

Nautilus em Grasshopper.



Nautilus em Grasshopper.



FIM.