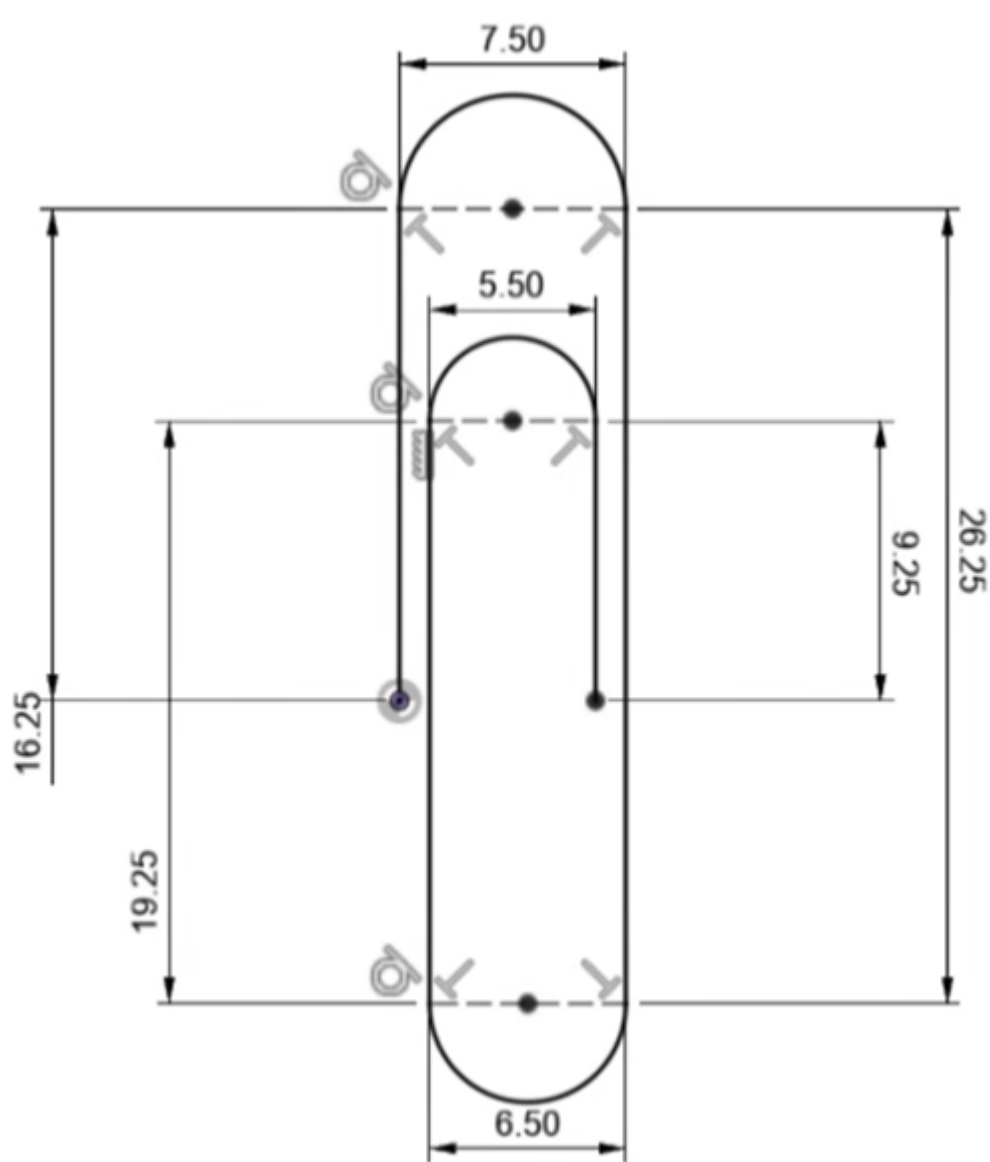


# Paperclip Using Sweep Tool

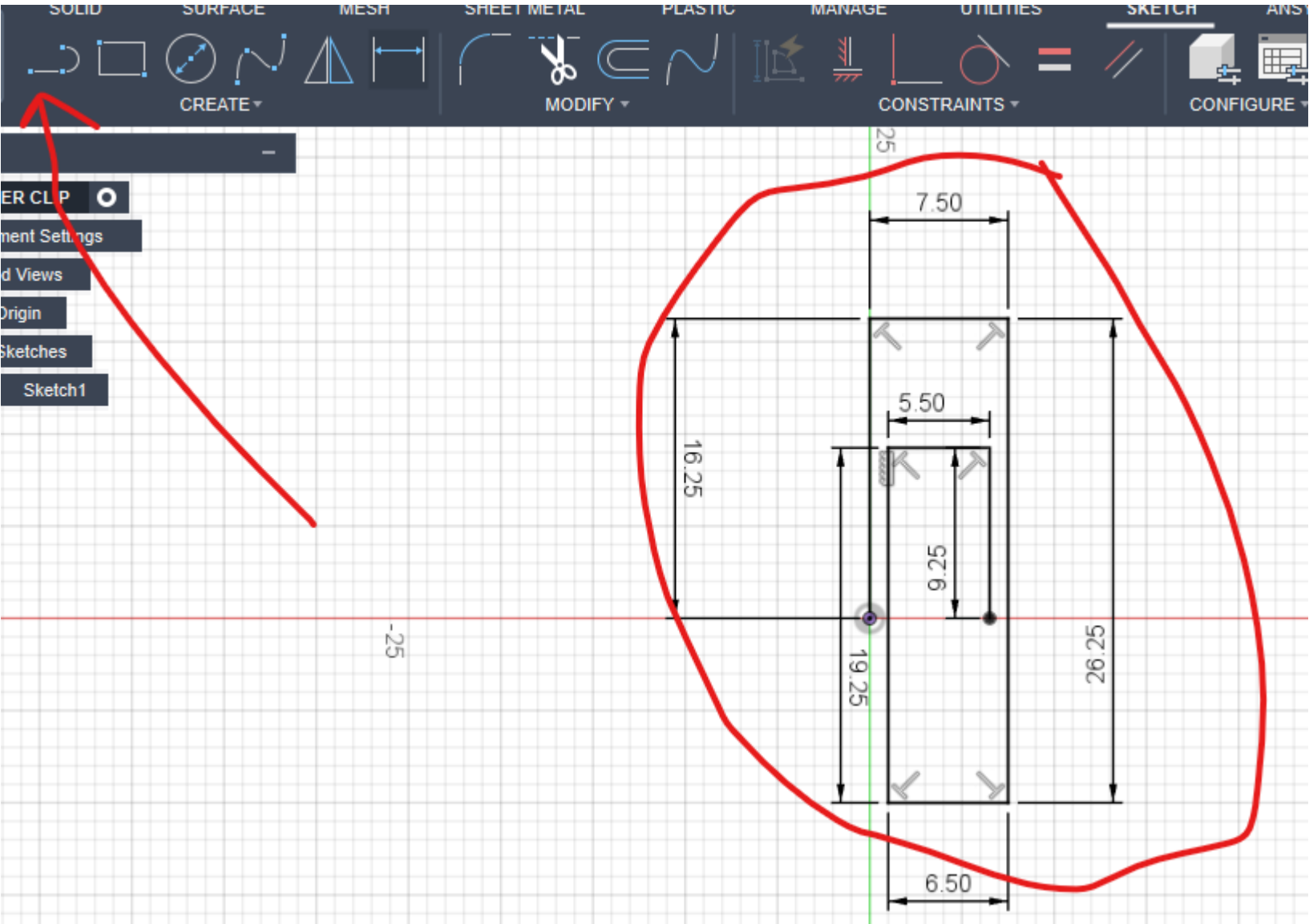
## 1. Reference Example



ProductDesignOnline.com/d3

This is the final paperclip we are recreating.

## 2. Sketch the Paperclip Path Using Line Tool



Start a **new sketch** on the **Top plane** (paperclip lying flat).

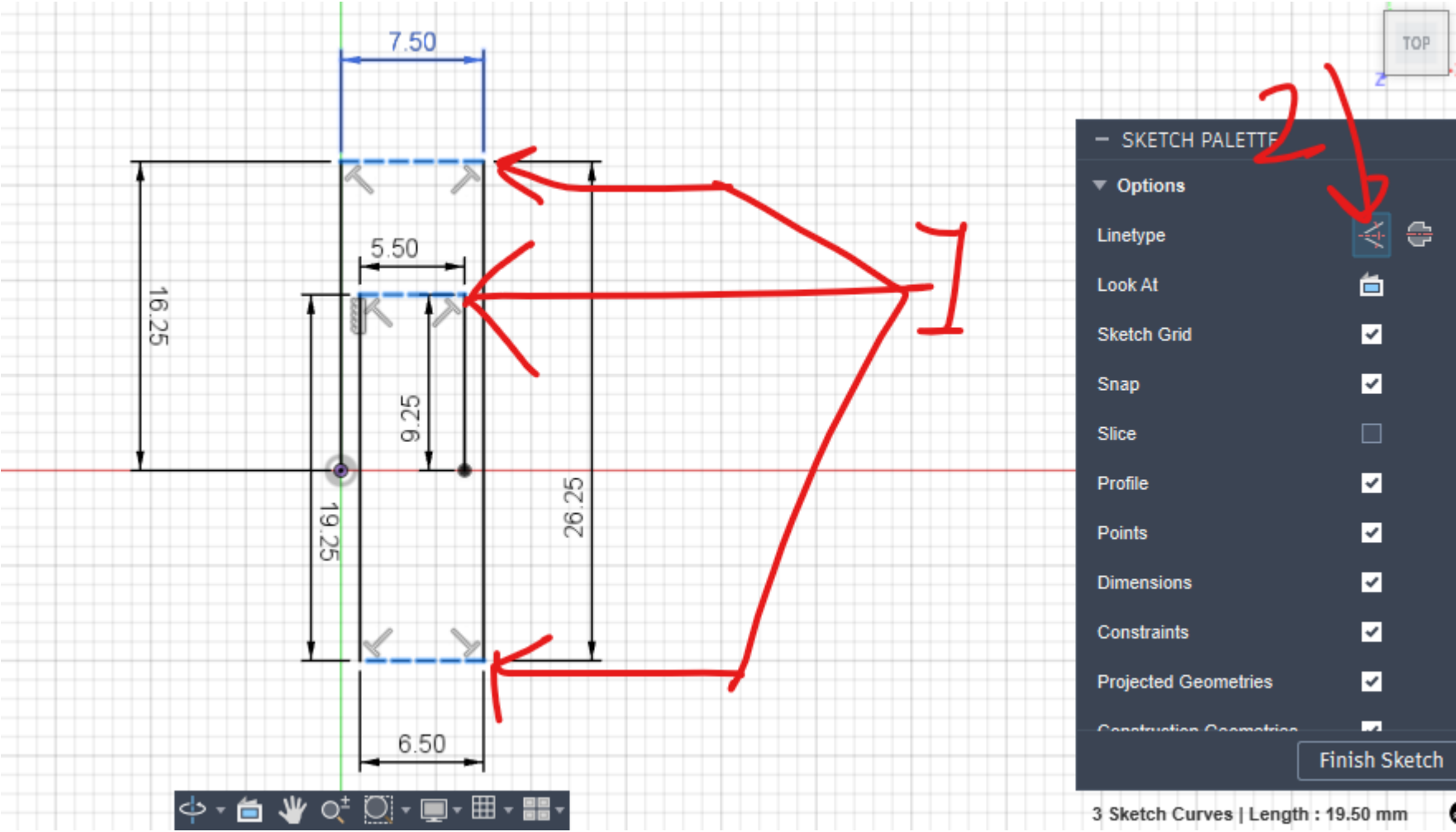
Use the **Line tool (L)** and follow the dimensions shown in the reference.

Make sure:

- Vertical lines use the *Vertical Constraint*
- Horizontal lines use the *Horizontal Constraint*
- Dimensions are typed and locked using **Tab**

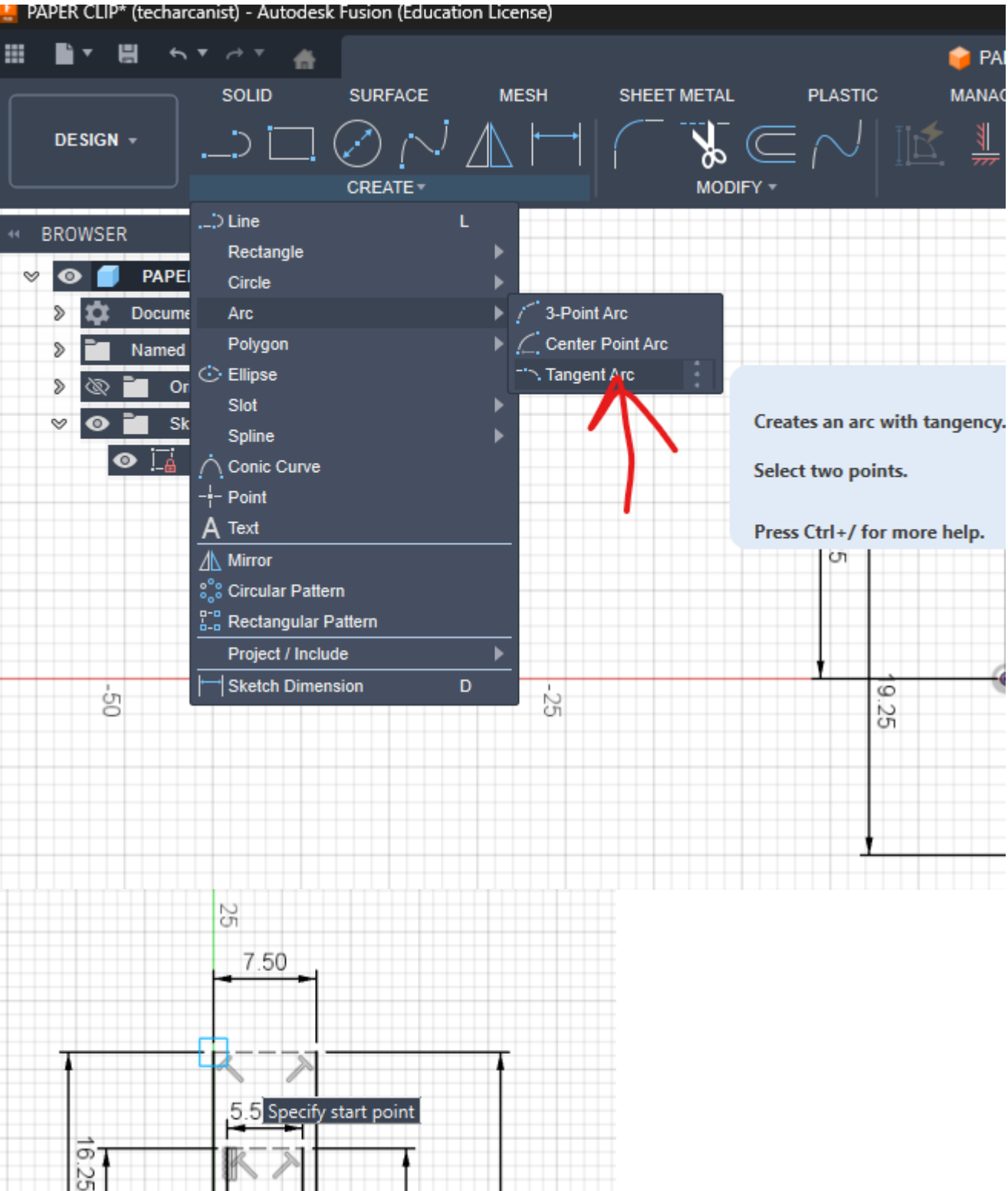
Once done, your sketch should be **fully constrained** (all lines turn black).

### 3. Convert Horizontal Lines to Construction Lines



1. Hold **Shift** and select all the **three horizontal lines**.
  2. Click **Construction** in the Sketch Palette.
- These lines were only for spacing, so they should not be part of the Sweep path.

## 4. Add Rounded Ends Using Tangent Arc



Use **Create** → **Arc** → **Tangent Arc**.

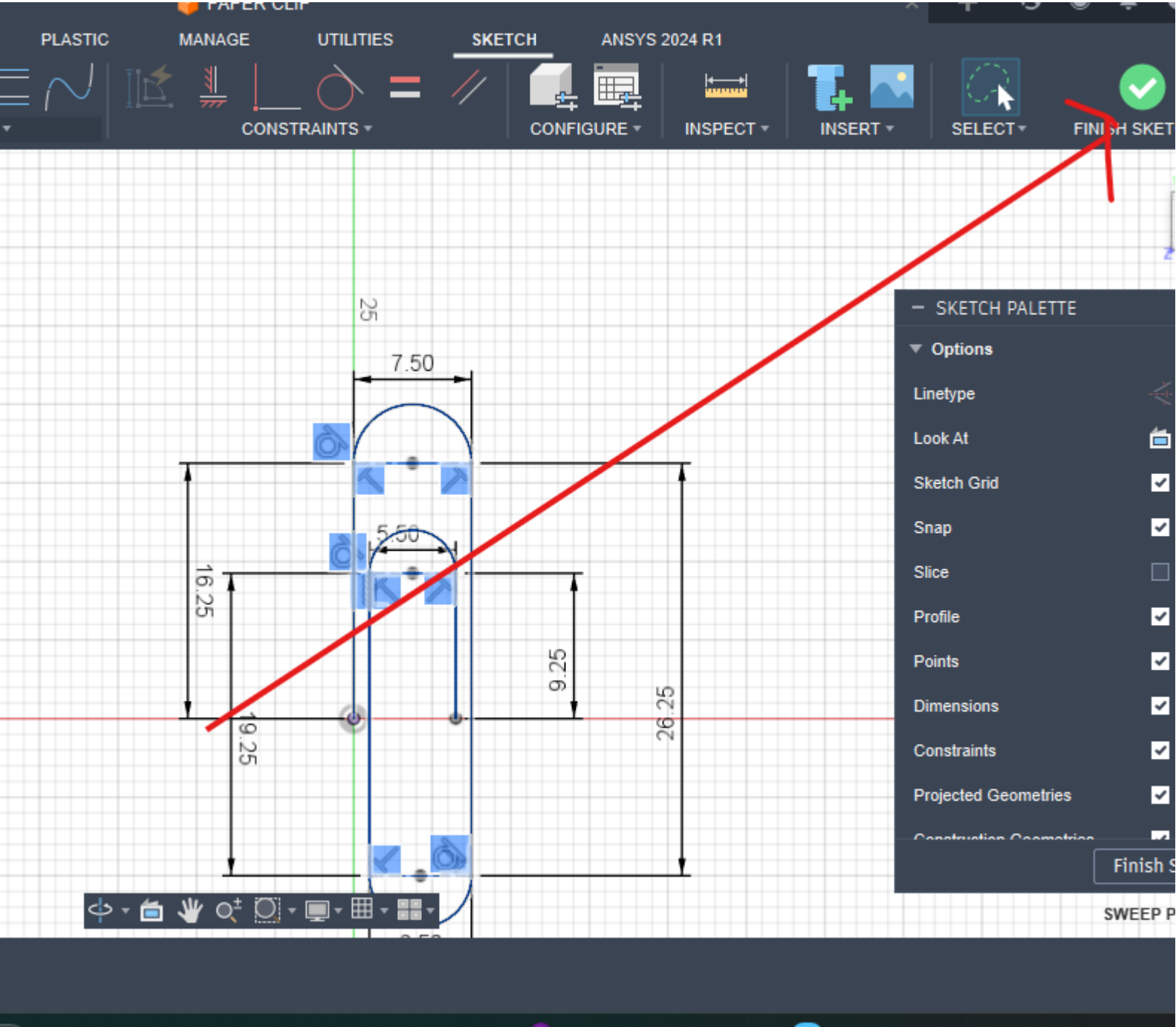
Then:

- Select each pair of endpoints
- Fusion will automatically add a **Tangent constraint**
- Make sure the tangent symbol appears

Repeat for all three curve ends.

Your entire sweep path is now complete.

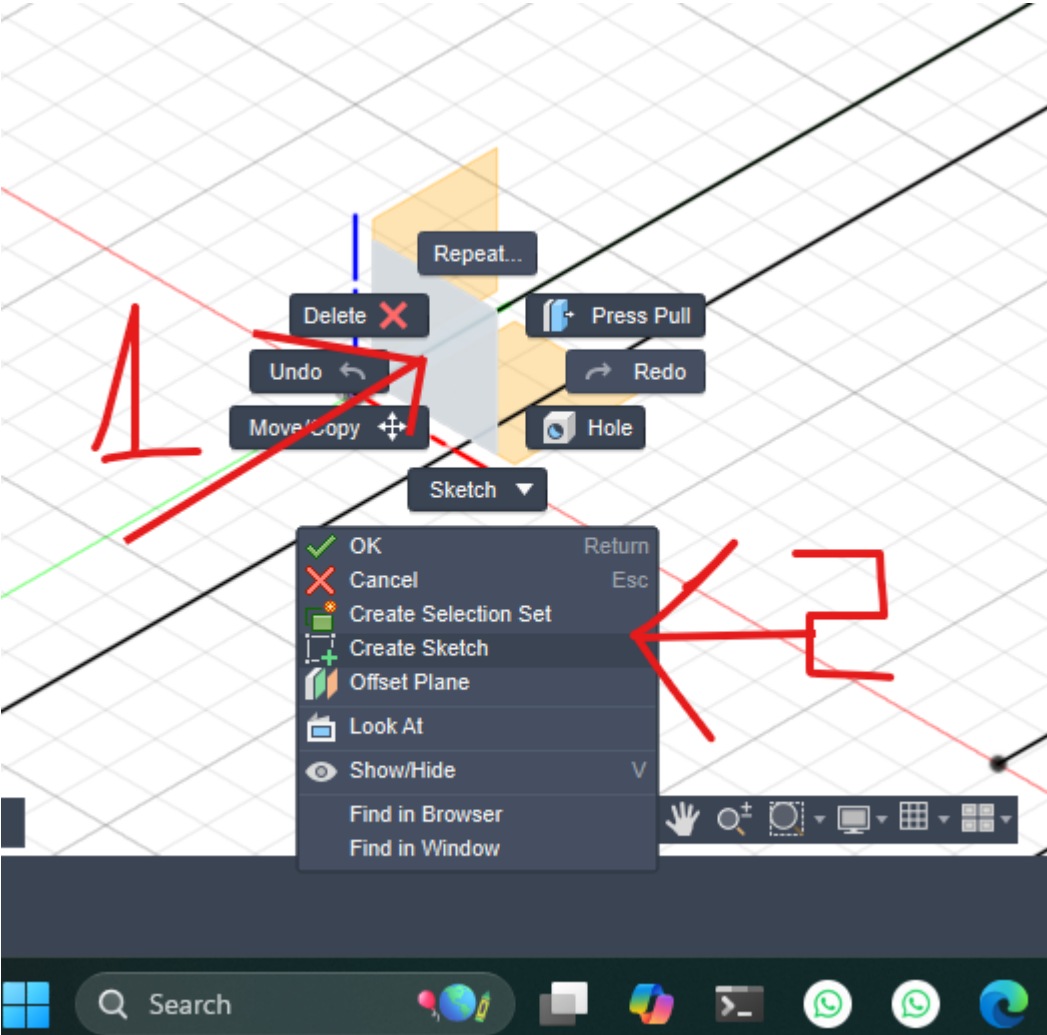
## 5. Finish Sketch



Click **Finish Sketch**.

Rename your sketch (good habit for parametric design).

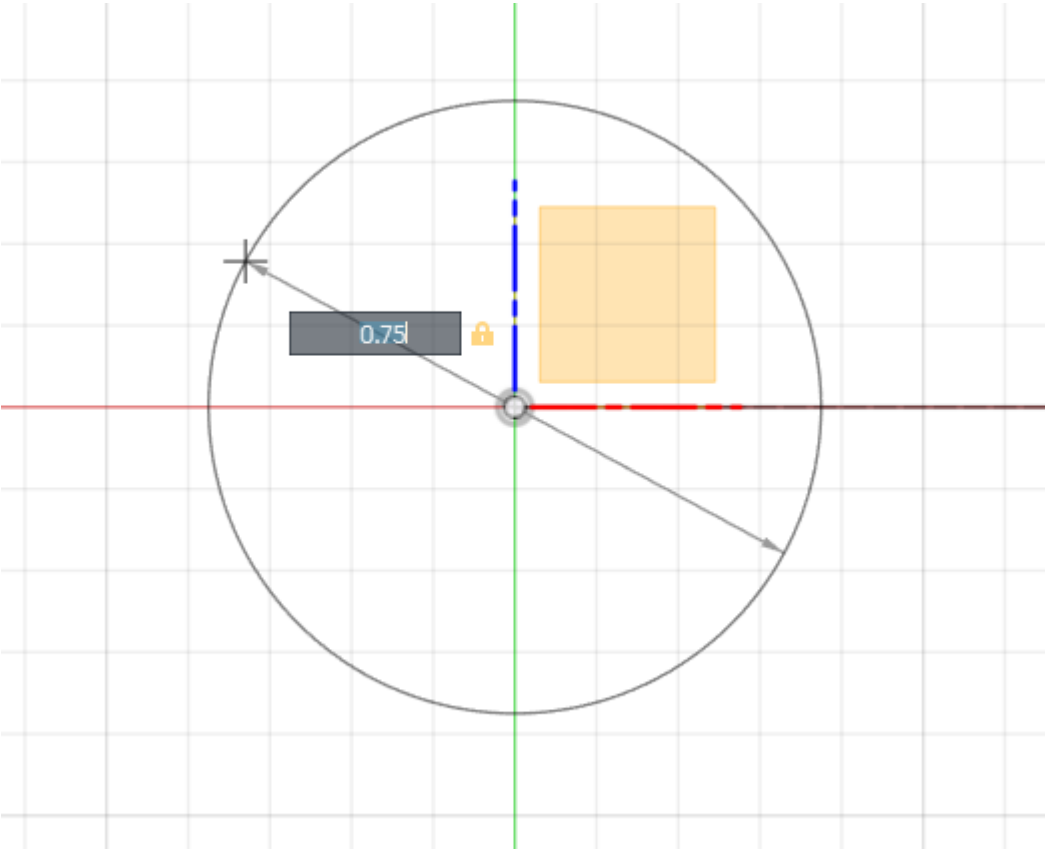
## 6. Create Sketch for Sweep Profile



1. Turn on **Origin** if it's hidden.
2. Right-click the **Front plane**
3. Select **Create Sketch**

This sketch will hold the **circle profile** of the paperclip wire.

## 7. Draw the Profile Circle

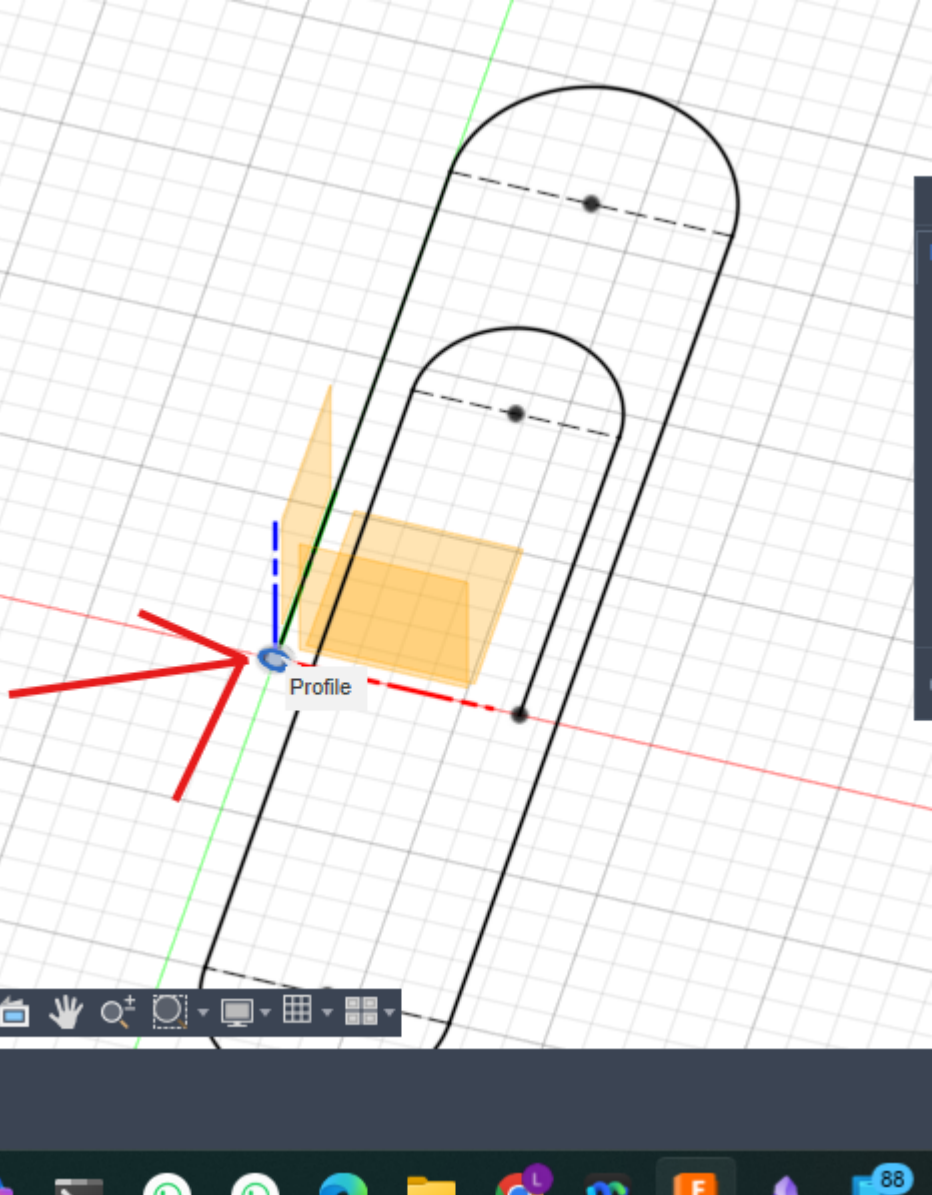
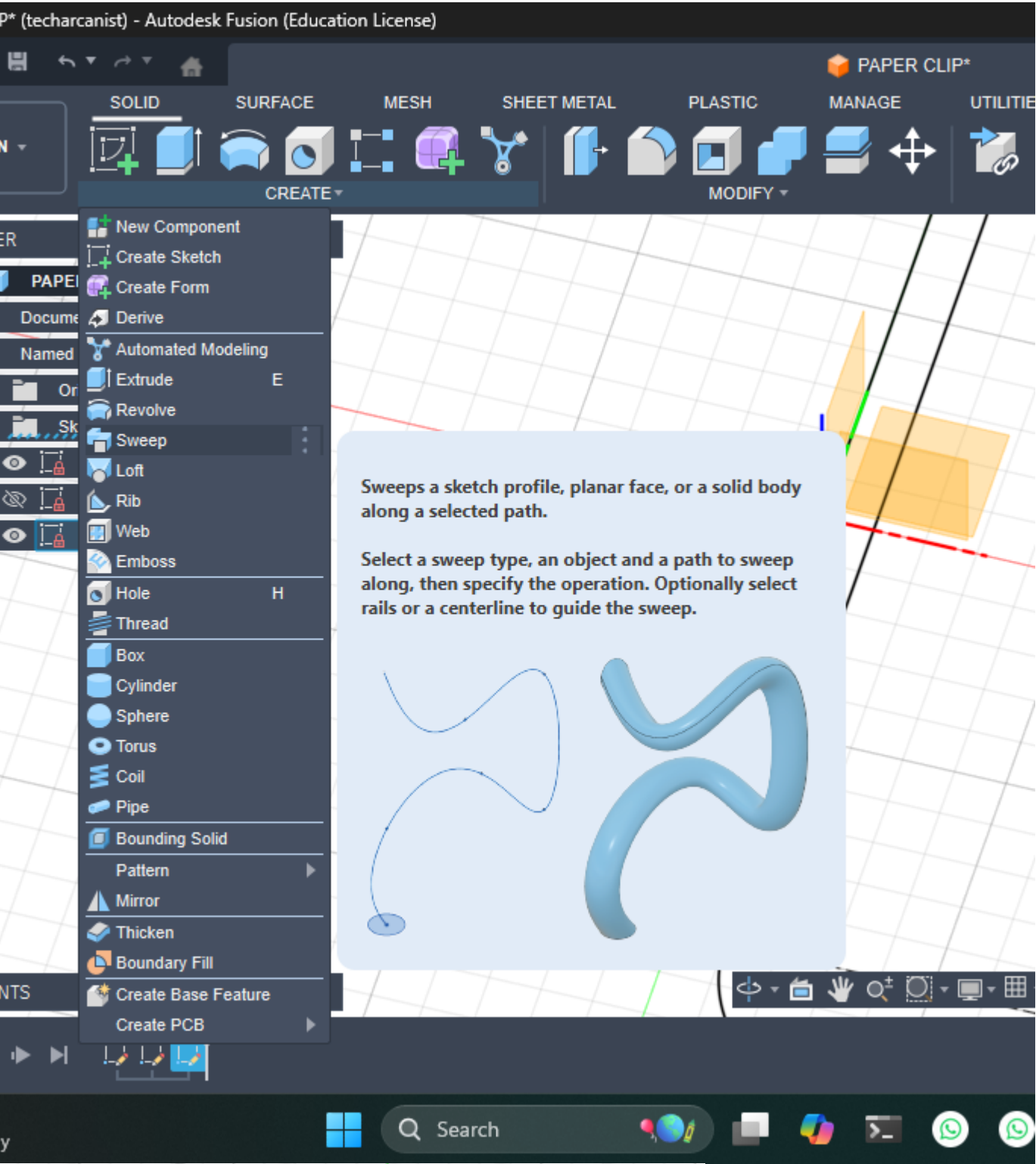


- Use **Center Circle (C)**
- Click the **Origin**
- Type **0.75 mm** (typical wire thickness)

Rename this sketch as well.

---

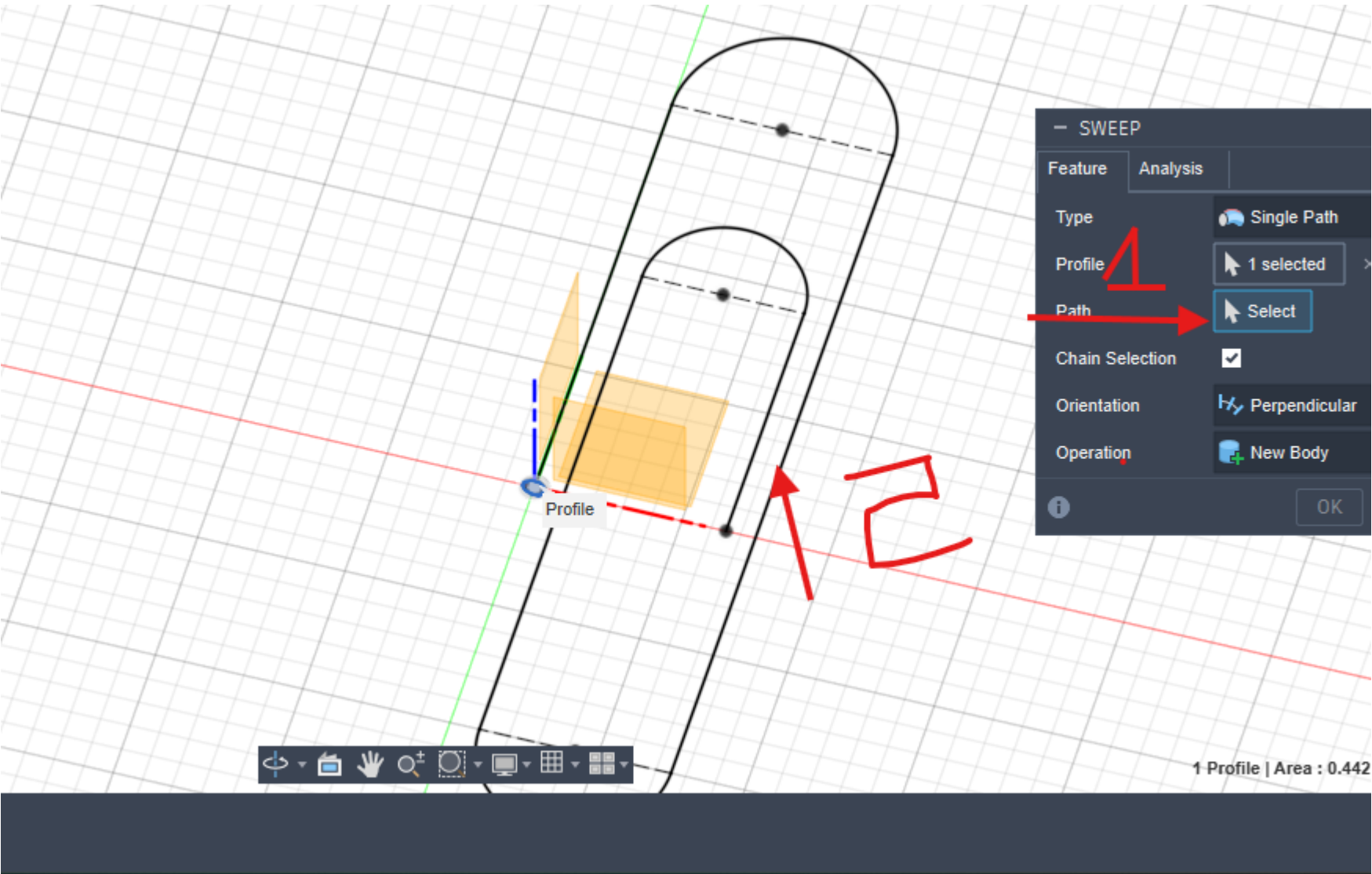
## 8. Use the Sweep Command



Go to **Create** → **Sweep**

Fusion will ask for:

1. **Profile** → select inside the circle sketch



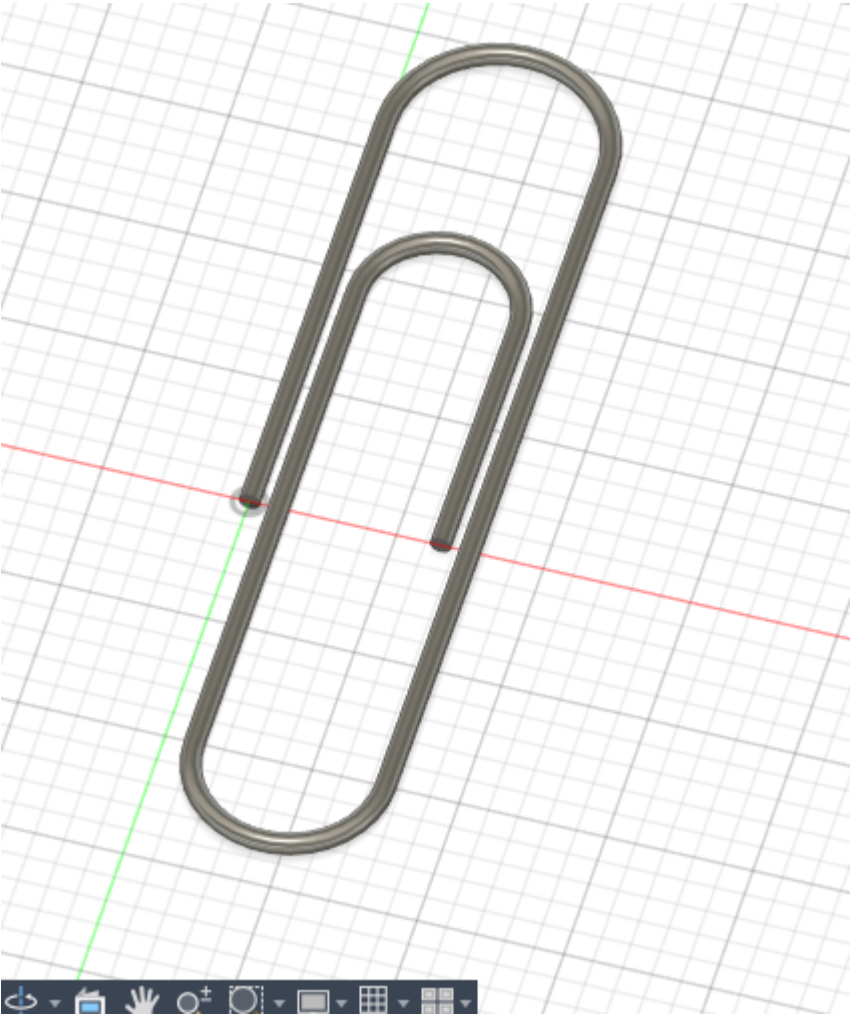
2. **Path** → select the entire paperclip outline

Make sure **Chain Selection** is ON (default).

Sweep Type: **Single Path**

Operation: **New Body**

## 9. Done!



Your paperclip is complete.