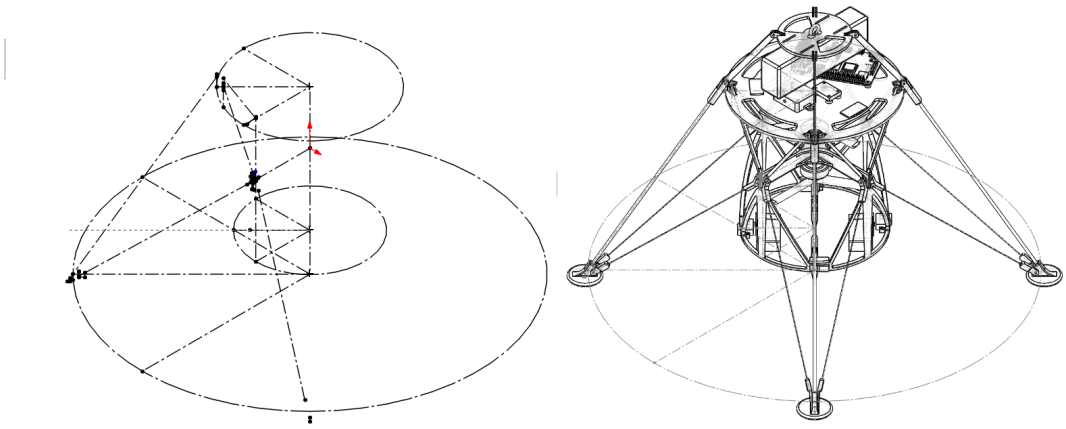
### 0.0.1 Vehicle Frame

The vehicle frame has the job of physically constraining each part of the vehicle, and transferring the loads effectively. Bellow is a list of componets that need to be constrained and attached to the frame.

- Motor Mount
- Flight Computer
- IMU
- Battery
- Landing Legs
- Vane Assembly
- Tether Attachment

For this scale of vehicle and for budget. Its important to keep things modifiable, and simple. For this reason I have chosen to use a truss based design. Trusses, especially symmetric trusses are very easy to analyze using hand calculations. However, trusses do add complexity in modeling and can be hard to modify in CAD. This why I have decided to model the entire vehicle frame off of one deriving sketch. This 3D sketch will capture the major dimensions of the vehicle, and the location of each joint. Each time a component of the truss is modeled (including clevis attachments and more), it will be deriving from the dimensions of this 3D sketch. This allows major changes to the vehicle, while automatically updating each part in the assembly to meet the new dimensions.



Deriving Sketch