

$$(Power)_{in} = (Power)_{out}$$

For the case of a rotational input and Slider output

$$\vec{T}_{in} \circ \vec{\omega}_{in} = \vec{F}_{out} \circ \vec{v}_{out}$$

$$F_{in} \cdot d_{in} \cdot \frac{V_{I_{in,out}}}{r_{in}} = F_{out} \cdot V_{I_{in,out}}$$

Given the input is on Link 2 and the Output is on Link 6

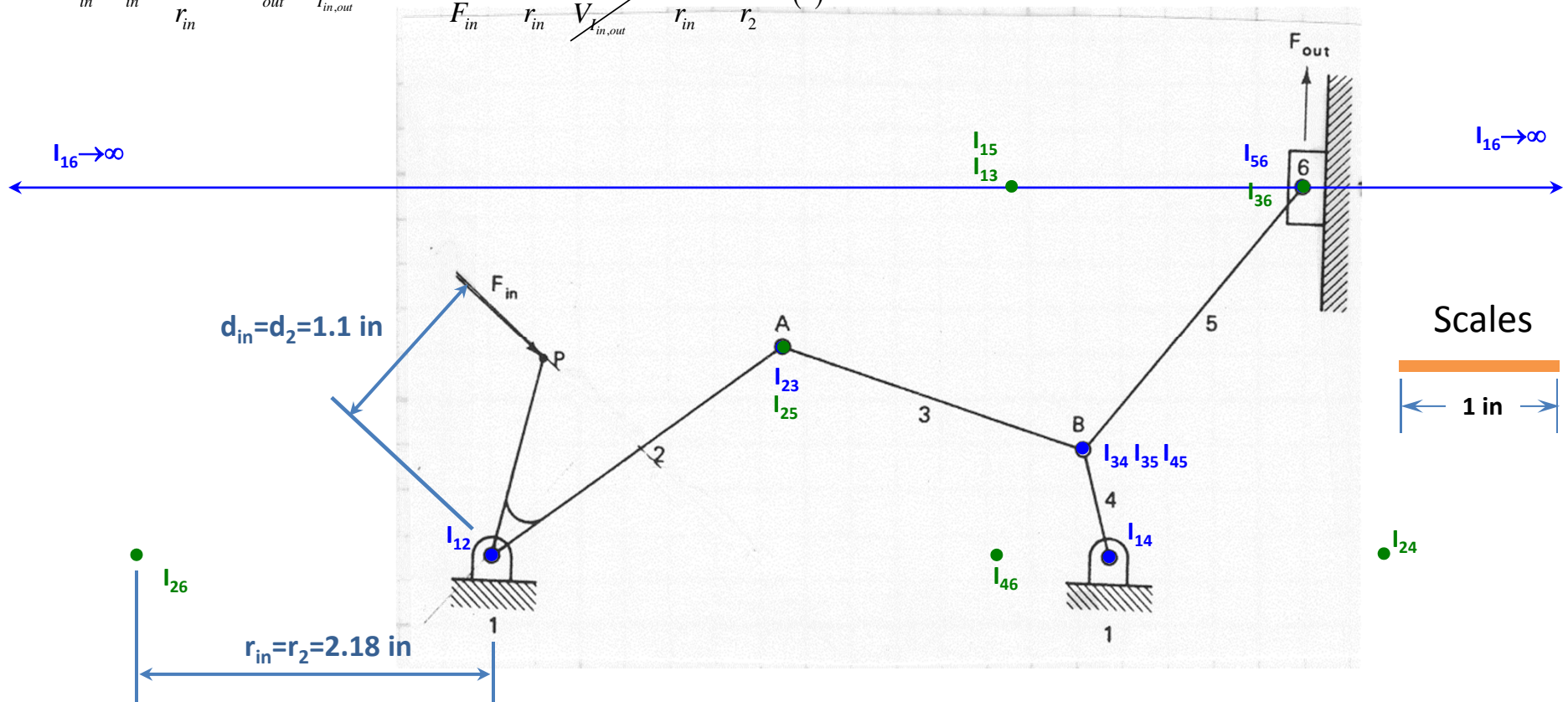
$$F_{in} \cdot d_{in} \cdot \frac{V_{I_{in,out}}}{r_{in}} = F_{out} \cdot V_{I_{in,out}} \Rightarrow \frac{F_{out}}{F_{in}} = \frac{d_{in}}{r_{in}} \cdot \frac{V_{I_{in,out}}}{V_{I_{in,out}}} = \frac{d_{in}}{r_{in}} = \frac{d_2}{r_2} \quad (1)$$

Defining Mechanical Advantage (MA) as

$$MA = \frac{F_{out}}{F_{in}} \quad (2)$$

Substituting in (1) into (2)

$$MA = \frac{d_{in}}{r_{in}} = \frac{d_2}{r_2} = \frac{1.1 \text{ in.}}{2.18 \text{ in.}} \approx 0.5$$



Instant Center  
Determining Velocity

1  
RBB