

①

← 8ft →

What is IMA of this thing?

$$IMA = \frac{\text{Effort arm}}{\text{Resistance arm}} = \frac{5ft}{3ft}$$

$$IMA = \frac{\text{Effort arm}}{\text{Resistance arm}} = \frac{6ft}{2ft} = 3$$

Load = 190lbs
What is the effort?

$$\text{Effort} \times IMA = \text{Resistance}$$

$$\text{Effort} = \frac{\text{Resistance}}{IMA} = \frac{190lbs}{3} = 63.3\bar{3}lbs$$

Wheel + axle

28cm

4cm

What is IMA when you turn the wheel?

$$IMA = \frac{\text{Diameter of what you turn}}{\text{Diameter of what gets turn}} = \frac{28cm}{4cm} = 7$$

10ft

6ft

3ft

9ft

What is IMA of this Ramp?

$$IMA = \frac{\text{Length of Ramp}}{\text{height of Ramp}} = \frac{10ft}{3ft} = 3.33$$

What is IMA of the Nail?

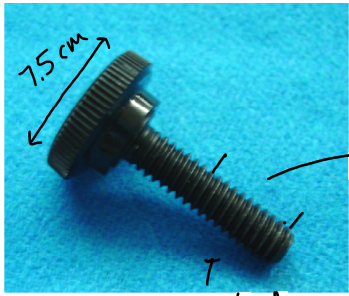
$$IMA_{\text{wedge}} = \frac{10\text{mm}}{6\text{mm}} = 1.67$$

$IMA = 3$

$$IMA = \frac{\pi \times \text{diameter}}{\text{Pitch}} = \frac{6.28\text{cm}}{.3\text{cm}} = 20.93$$

$$\text{Pitch} = \frac{3\text{cm}}{10\text{threads}} = \frac{.3\text{cm}}{\text{Thread}}$$

$$IMA = \frac{49}{12} = 4.08$$



7.5 cm

5 cm

$$\frac{5 \text{ cm}}{10} = .5 \text{ cm}$$

10 threads

$$\text{IMA} = \frac{\pi \text{ diameter}}{\text{Pitch}} = \frac{\pi (7.5)}{.5 \text{ cm}}$$
$$= \frac{23.56}{.5} = \boxed{47.2}$$