

3.



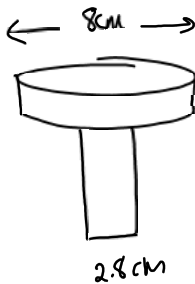
$$IMA = \frac{L}{h} = \frac{100}{40} = 2.5$$

8.



$$IMA = \frac{EA}{RA} = \frac{22''}{9''} = \boxed{2.44}$$

9.



$$IMA = \frac{\text{dia Turn wheel}}{\text{dia Turn axle}}$$

$$\frac{8\text{cm}}{2.8\text{cm}} = \boxed{2.86}$$

10.


$$IMA = \frac{\text{Resistance Force}}{\text{Effort Force}} = \frac{200\text{N}}{40\text{N}} = \boxed{5}$$

11.

$$IMA = 5$$

$$5 \times 1.2\text{m} = \boxed{6\text{m}}$$

12.



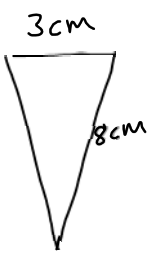
$$MA = \frac{\text{Resistance Force}}{\text{Effort force}} = \boxed{3.75}$$

13. $I_{ma \text{ screw}} = \frac{\text{Circumference wheel}}{\text{Pitch}} = \frac{\pi d}{\text{Pitch}}$

$$= \frac{\pi (4\text{cm})}{\text{Pitch}} = \frac{(\pi)(4\text{cm})}{.25\text{cm}}$$

$$\text{Pitch} = \frac{2.5\text{cm}}{10 \text{ Thread}} = \boxed{50.27}$$

14.

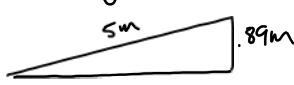


$$I_{MA \text{ wedge}} = \frac{l}{w} = \frac{8}{3} = \boxed{2.67}$$

15. Wheel + axle

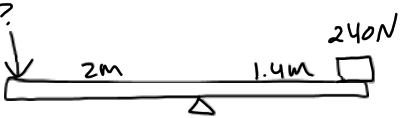
$$\frac{\text{diameter of what you turn}}{\text{diameter of what gets turned}} = \frac{6\text{cm}}{1.3\text{cm}} = \boxed{4.62}$$

16.



$$I_{MA \text{ Ramp}} = \frac{l}{h} = \frac{5\text{m}}{.89\text{m}} = \boxed{5.62}$$

17.



$IMA = \frac{2m}{1.4} = 1.42857$

Effort \times IMA = Resistance

Effort = $\frac{240N}{1.42857}$

Effort = 168N