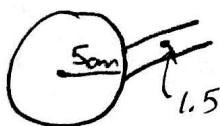
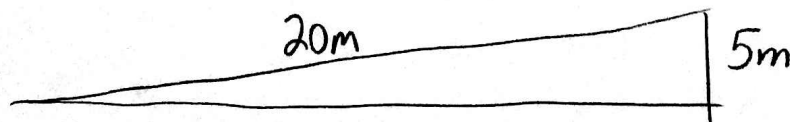


$W = F \times d$	$MA = \frac{F_o}{F_i}$	Inclined Plane $MA = \frac{l}{h}$	Lever $MA = \frac{l_e}{l_r}$ or $MA = \frac{l_i}{l_o}$	Wheel & Axle $MA = \frac{r_w}{r_a}$	Pulleys MA = # of support strings
	$P = \frac{W}{t}$	Eff = $\frac{W_o}{W_i} \times 100$			

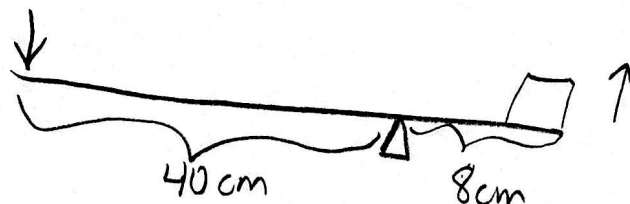
- When is work done?
- You apply 200N of force to a machine and it applies 450 N of force. What is the MA?
- You apply 500N of force as you push a box 5 meters. What is the work you have done?
- Suppose you do 3000 J of work in 15 seconds. What is your power?
- What is the efficiency of a machine that does 250 J of work when you apply 300 J of work to the machine?
- A doorknob has a radius of 5 cm and the stem has a radius of 1.5 cm. Find MA.



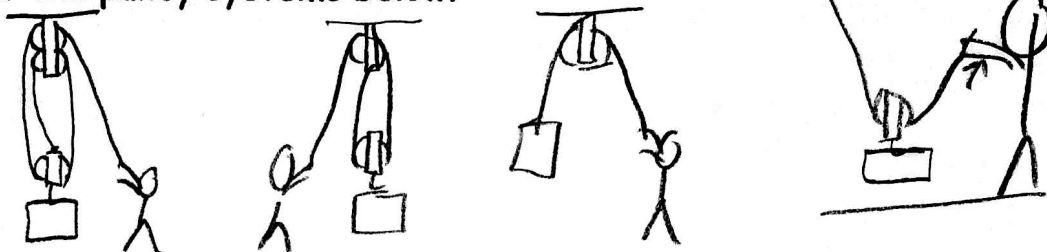
- A 20 m ramp raises 5m . Find the MA.



8. What is the MA the lever below?



9. Find the MA of the pulley systems below.



10. Give an example for each of the three classes of levers

1st

2nd

3rd

11. Name all six simple machines and give 2 examples of each.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

12. Write the formula for work. Explain how machines make work easier.

13. What causes all machines to be less than 100% efficient?