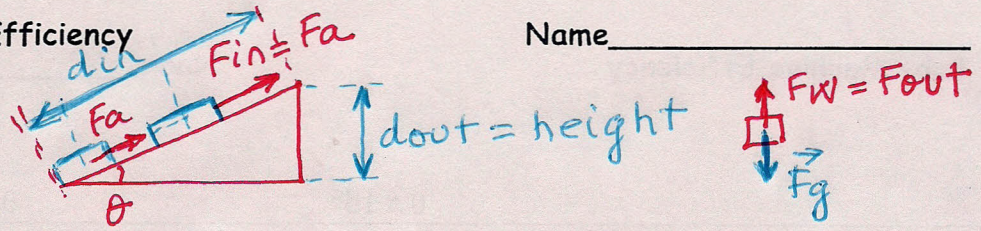
Lab: Machine Efficiency Name_____

Lab Data



Out:

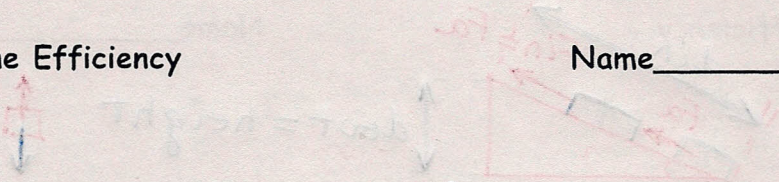
	θ = 15°	θ = 40°
F_{out} (= F_w) weight of the object	5N	same as for 15° trial
d_{out} (=height)	0,17 m	0.37 m

In:

	θ = 15°	θ = 40°
d_{in} (=length)	0,53 m	same as for 15° trial
F_{in} (= F_a)	2.2 N	3.8 N

Lab Calculations	*Copy calculations from video here.*	*Do your own calculations here.*
$W_{out} = F_{out} \times d_{out}$	Wout = 5N . 0.17m Wout = 0,85 J	
$W_{in} = F_{in} \times d_{in}$	Win = 2.2N . 0.53m Win = 1.J	

Lab: Machine Efficiency **Name**_____



	θ = 15°	θ = 40°
$M.A. = \frac{F_{out}}{F_{in}}$	$M.A. = \frac{Fout}{Fin} = \frac{5N}{2.2N}$ $M.A. = 2.3$	
$Eff = \frac{W_{out}}{W_{in}} \times 100$	$Eff = \frac{Wout}{Win} \times 100$ $Eff = \frac{0.85J}{1.2J}$ $Eff = 71\%$	

Conclusions:

1. As mechanical advantage (increases, decreases), a machine becomes easier to use. Which inclined plane had the best mechanical advantage?

   _____

2. Which inclined plane was the most efficient?

   _____

3. As machines become easier to use, what happens to their efficiency?

   _____

   Explain.