

Oct 28 - CP

Purchase (if any ropes)	Lift height (cm)	Pull Distance (cm)	Pull distance Divided by Lift distance	Number of ropes doing the lifting	Ideal Mechanical Advantage IMA	Mass being lifted (g)	Pull Force "g"	Mass Lifted Divided by Pull force Real MA
1	20cm	20cm	$\frac{20}{20} = 1$	1	1	200	200	$\frac{200}{200} = 1$
2	20cm	40	2	2	2	200	$\frac{150}{100} = 1.5$	
3	20	60	3	3	3	200	$\frac{50}{50} = 1$	
4	20	80	4	4	4	200	$\frac{75}{50} = 1.5$	$\frac{200}{75} = 2.7$
4					4	300g	$\frac{75}{100} = 0.75$	

$IMA = 6$
 $Real = 3.55$
 $Real = \frac{Load}{Effort} = \frac{8.88\text{ kg}}{2.5} = 3.55$
 $Efficiency = \frac{MA}{IMA} \times 100\%$
 $\frac{3.55}{6} \times 100\% = 59\%$
 Real life
 $\frac{100\text{ lb}}{3.55} = 28.17\text{ lb}$
 $\frac{100\text{ lb}}{6} = 16.67\text{ lb}$ Ideal Everything Perfect No friction

$Efficiency = \frac{MA}{IMA} \times 100\%$
 $Effort \times MA = Output \text{ or } Load$