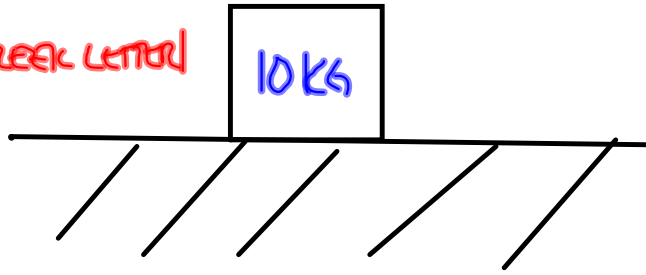


QUIZ TOMORROW - OPEN RESPONSE TYPE QUESTION

$\mu_s \rightarrow$ ^{STATIC} COEFFICIENT OF FRICTION = 0.25
 \uparrow μ (GREEK LETTER)



$$\mu = \frac{F_{f(max)}}{F_v} = 0.25 = \frac{F_{f(max)}}{98.1 \text{ N}}$$

\uparrow mg

$$F_{f(max)} = (0.25)(98.1) = 24.5 \text{ N}$$

Ok the block starts to move at 24.5N
then $\mu \rightarrow 0.15$ (DYNAMIC μ)

$$F_{f(min)} = (0.15)(98.1) = 14.71 \text{ N}$$

FRICTION RESISTS MOTION

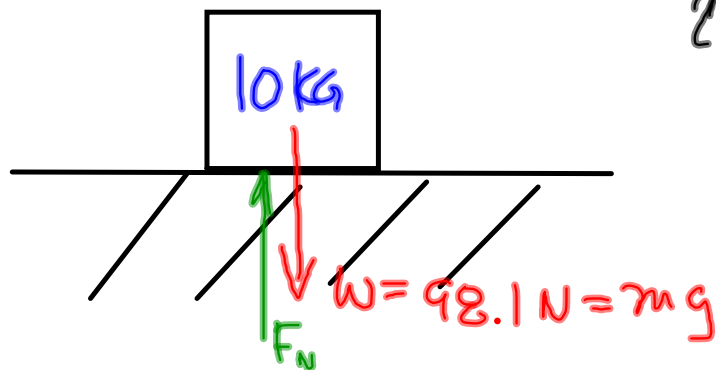
FRICTION REACTS TO A FORCE

\rightarrow BUT FRICTION IS NECESSARY FOR MOTION

FRICTION CREATES HEAT

{ FRICTION IS RESPONSIBLE FOR THE FACT THAT ALL MACHINES
ARE < 100% EFFICIENT.

$\mu_s \Rightarrow$ STATIC COEFFICIENT OF FRICTION = 0.25



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$$\mu_s = \frac{F_{f(\max)}}{F_N}$$

$$F_{f(\max)} = \mu F_N = (0.25)(98.1) = 24.53 \text{ N}$$

$$= 0.15 \cdot 98.1 = 14.72 \text{ N}$$

μ_s and F_N are indicated by blue lines pointing to the respective terms in the calculation above.

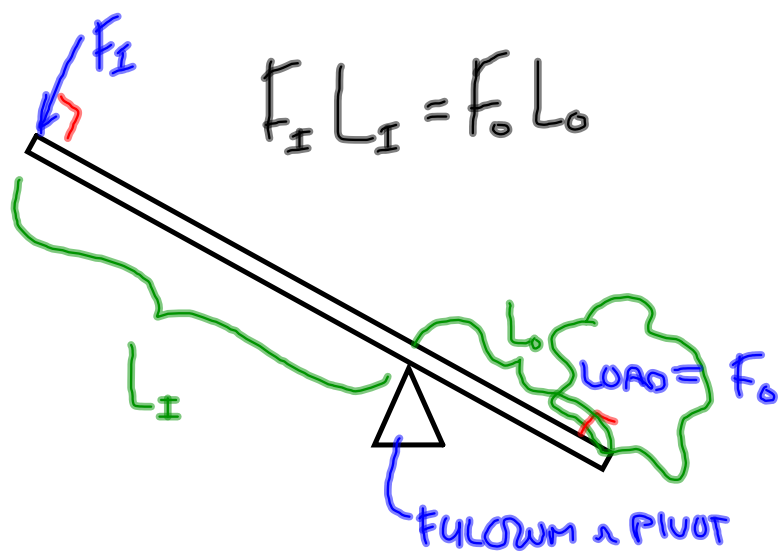
FRICTION OPPOSES MOTION ~

FRICTION IS NECESSARY FOR MOTION ~

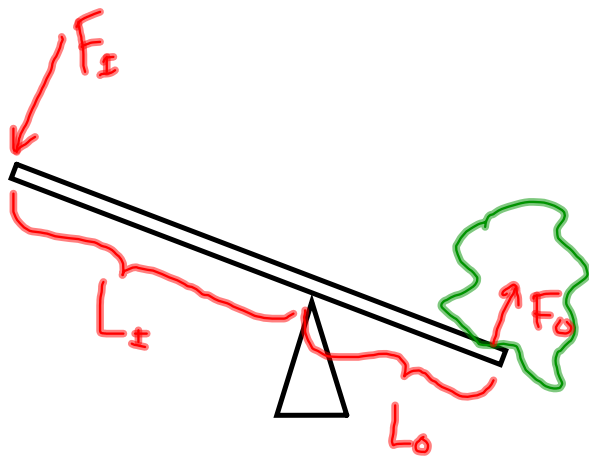
STATIC FRICTION > DYNAMIC FRICTION

FRICTION CREATES HEAT

FRICTION IS RESPONSIBLE FOR THE FACT THAT ALL MACHINES ARE LESS THAN 100% EFFICIENT



$$\frac{L_0}{L_1} = \text{M.A.} = \frac{L_1}{L_0}$$



$$F_I L_I = F_O L_O$$

$$\frac{F_O}{F_I} = MA = \frac{L_I}{L_O}$$