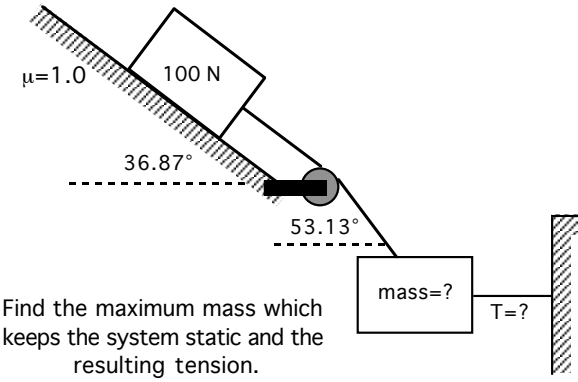
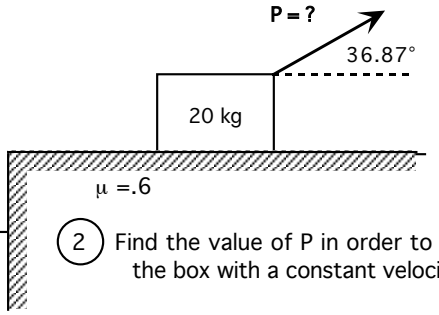
W3.11H

#1111cc/wwb

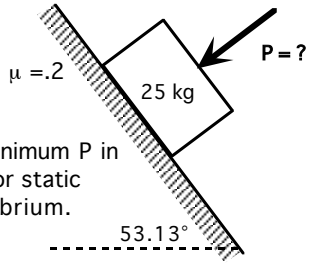
Static Equilibrium ($\Sigma F = 0$) with Friction ($\mu \neq 0$)



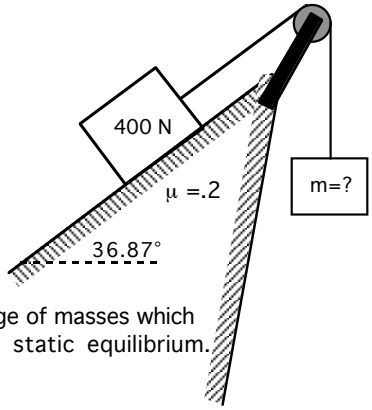
1) Find the maximum mass which keeps the system static and the resulting tension.



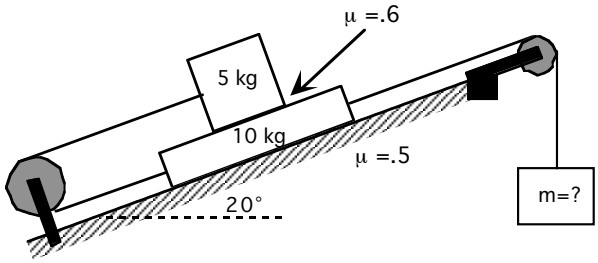
2) Find the value of P in order to pull the box with a constant velocity.



3) Find the minimum P in order for static equilibrium.



4) Find the range of masses which will maintain static equilibrium.



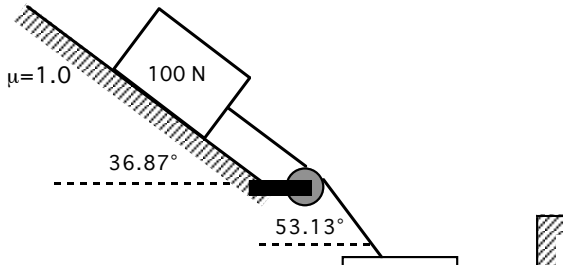
5) What mass (m) would cause the 10 kg block to slide up the incline at a constant speed?

KEY

W3.11H

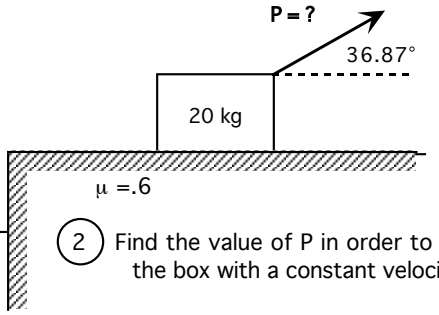
#1111cc/wwb

Static Equilibrium ($\Sigma F = 0$) with Friction ($\mu \neq 0$)



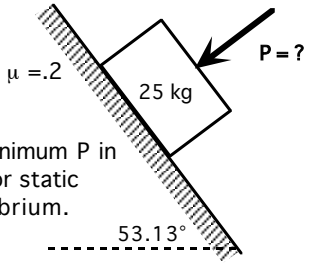
1) Find the maximum mass which keeps the system static and the resulting tension.

T = 12 N
m = 1.6kg



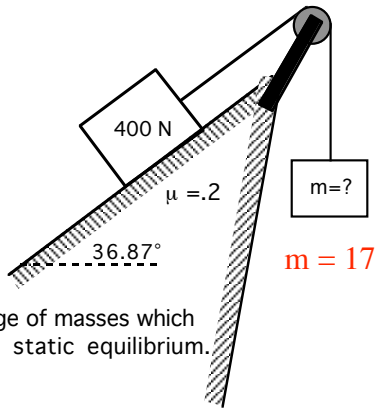
P = 103.4 N

2) Find the value of P in order to pull the box with a constant velocity.



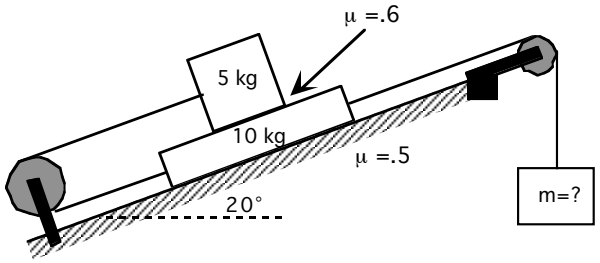
3) Find the minimum P in order for static equilibrium.

P = 850 N



m = 17.6-30.4 kg

4) Find the range of masses which will maintain static equilibrium.



m = 14.4 kg

5) What mass (m) would cause the 10 kg block to slide up the incline at a constant speed?