

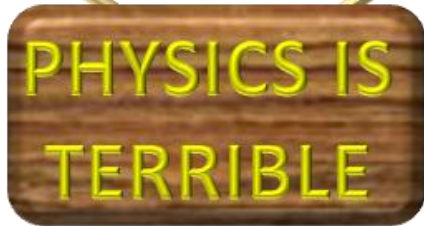


STATIC EQUILIBRIUM & TENSION

SP2. Obtain, evaluate, and communicate information about how forces affect the motion of objects
 b. Use mathematical representations to calculate magnitudes and vector components for typical forces including gravitational force, normal force, friction forces, tension forces, and spring forces.

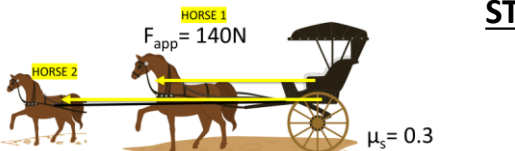


STATIC EQUILIBRIUM



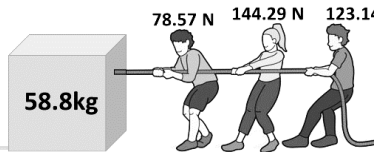
- When the net force equals _____ on any axis the object is at _____
- This condition allows us to determine unknown quantities using basic algebraic manipulation of Net force equations, particularly determining the _____ force when two-dimensional forces are applied or when _____ (T) is applied to stationary objects.

STATIC EQUILIBRIUM GUIDED PRACTICE



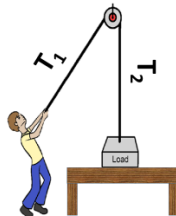
Jaden witnesses two horses trying to pull a 50 kg cart that is stuck in the mud. He needs a strong horse and wanted to buy one of these horses when he came to market today. Which horse should he buy and why?

Material	μ_s
Steel on wood	0.44
Wood on wood	0.6
Plastic on wood	0.2
Teflon on wood	0.01
Concrete on wood	0.8



Jamellia gets her three friends to help her move her brand new physics box into her apartment. They cant get it to move across the wooden floor. Her friends wanted to know the type of box she bought...so they wont buy it either. What type of box does she have?

Gerardo is pulling on a box to raise it up to his apartment window...but he cant get it to move off the pallet.
Derive an equation for the mass of this box.



b) Calculate the mass if he is pulling with a force of 40N and the pallet exerts a normal force of 20N

A 5kg box is hanging in the air attached to a string on the left and right each at a 30 degree angle. Find the TENSION in each rope