

# **Newton's 1st Law**

# Forces

- Push or pull
- Contact or long range

# Forces

- Push or pull

**Newtons, N**

# Examples of Forces

Gravity

Spring

Pushing

Friction

Magnetic

Air Resistance

Electric

Normal

Tension

## Examples of Forces

Gravity

Spring

Pushing

Friction

Magnetic

Air Resistance

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Normal


Tension

Newton's 1st Law:

**A body in motion remains in motion, a  
body at rest remains at rest, unless acted  
upon by an unbalanced (net) force.**

A force vector is an arrow that shows the direction and strength of a force.

 This shows a big force to the left.

 This shows a small force to the right.

$$\begin{aligned} & \mathbf{F_{net} (Net Force)} \\ & = \\ & \mathbf{Unbalanced Force} \\ & = \\ & \mathbf{\Sigma F (Sum of Forces)} \end{aligned}$$



# Tug of War

**You**



7N

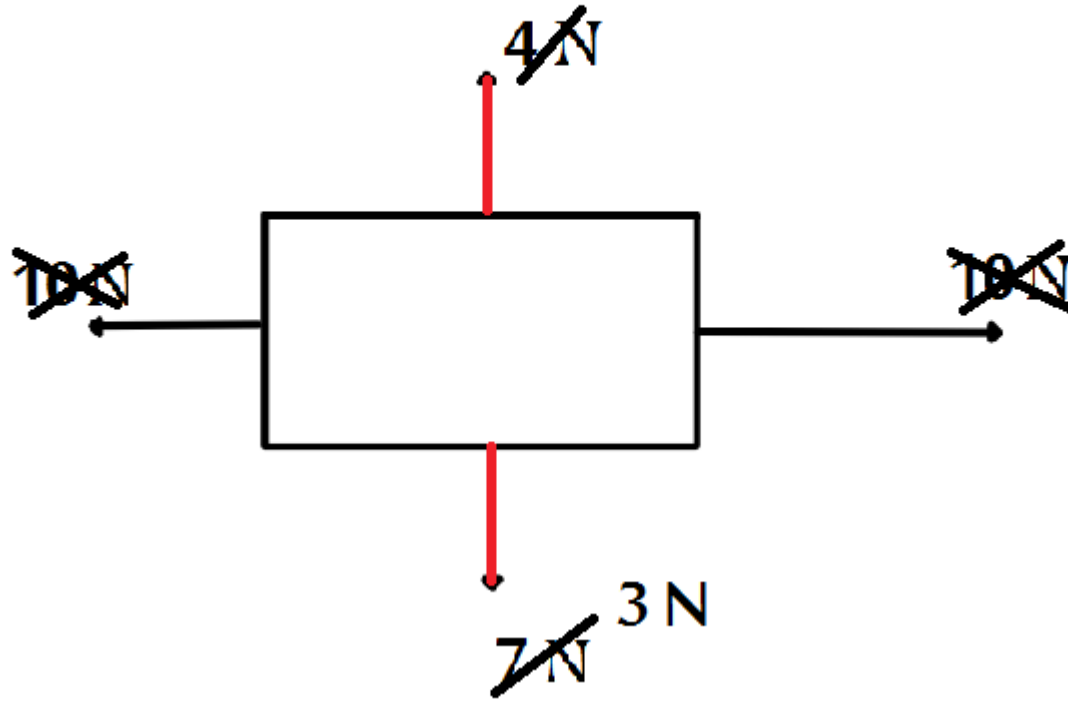


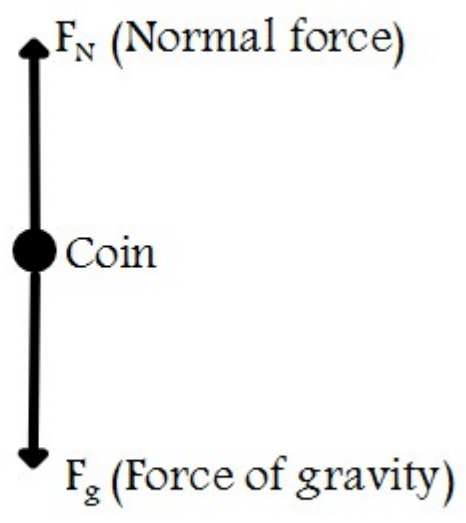
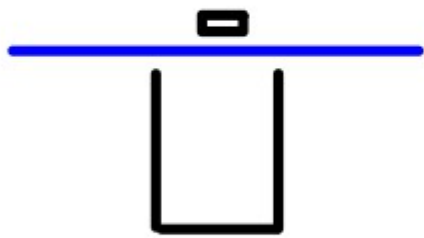
5N

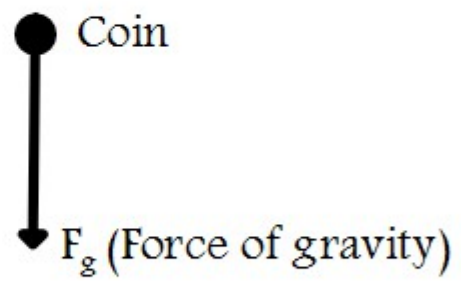
**Your Friend**

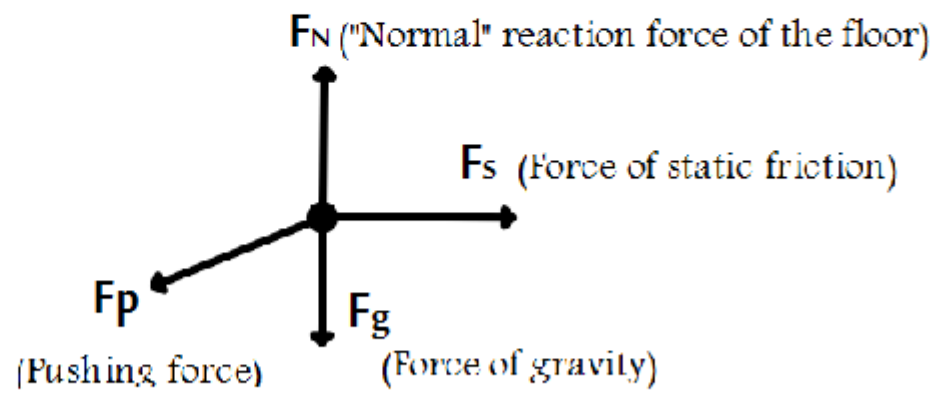
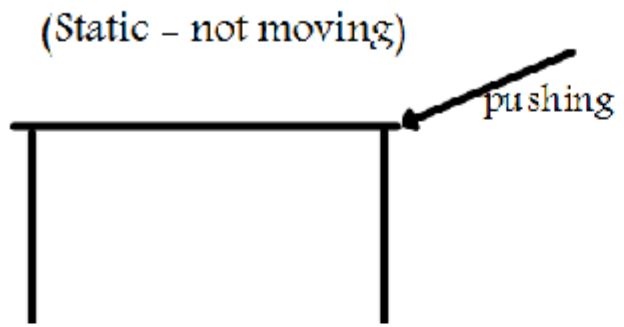


# What is the Net Force?









(Static - not moving)

