

Let The Force be With You



What is a Force?



A **PUSH**  or a **PULL** 

What does a force do?



Causes a **change** in motion; starts it , stops it; speeds it up; slows it down or changes its direction



How do I describe a force?

A force has
a direction
and



a magnitude (strength)

How do I represent a force?

Measured in Newtons (N)

Ex. 30 N 

What are some examples of forces?

Gravity

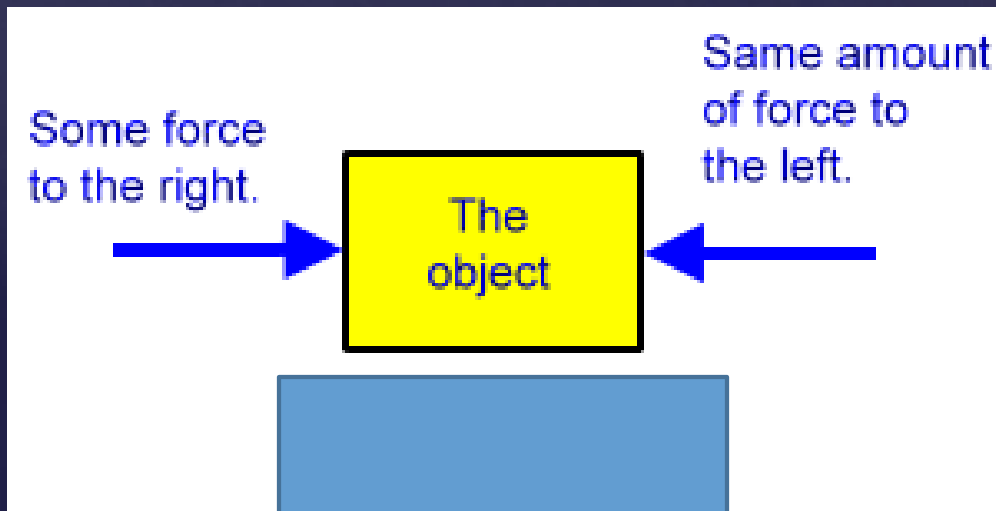
Friction

You pushing or pulling



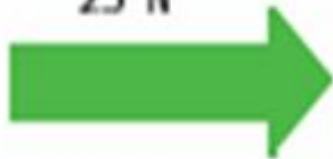
What is a net force?

The total amount (sum) of all forces acting on an object in the horizontal or vertical.

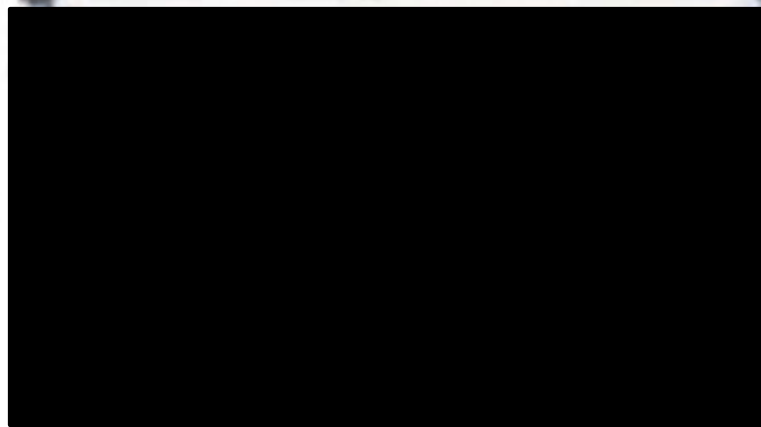




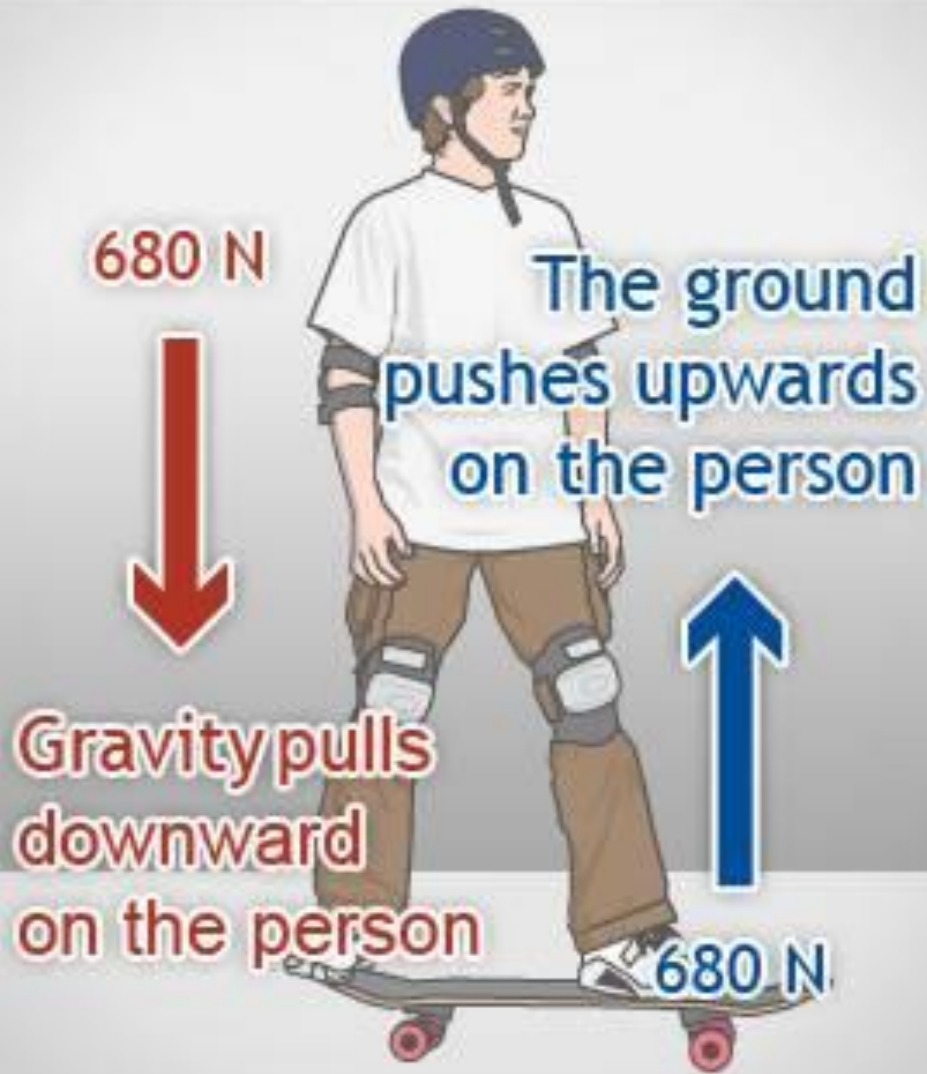
25 N



20 N



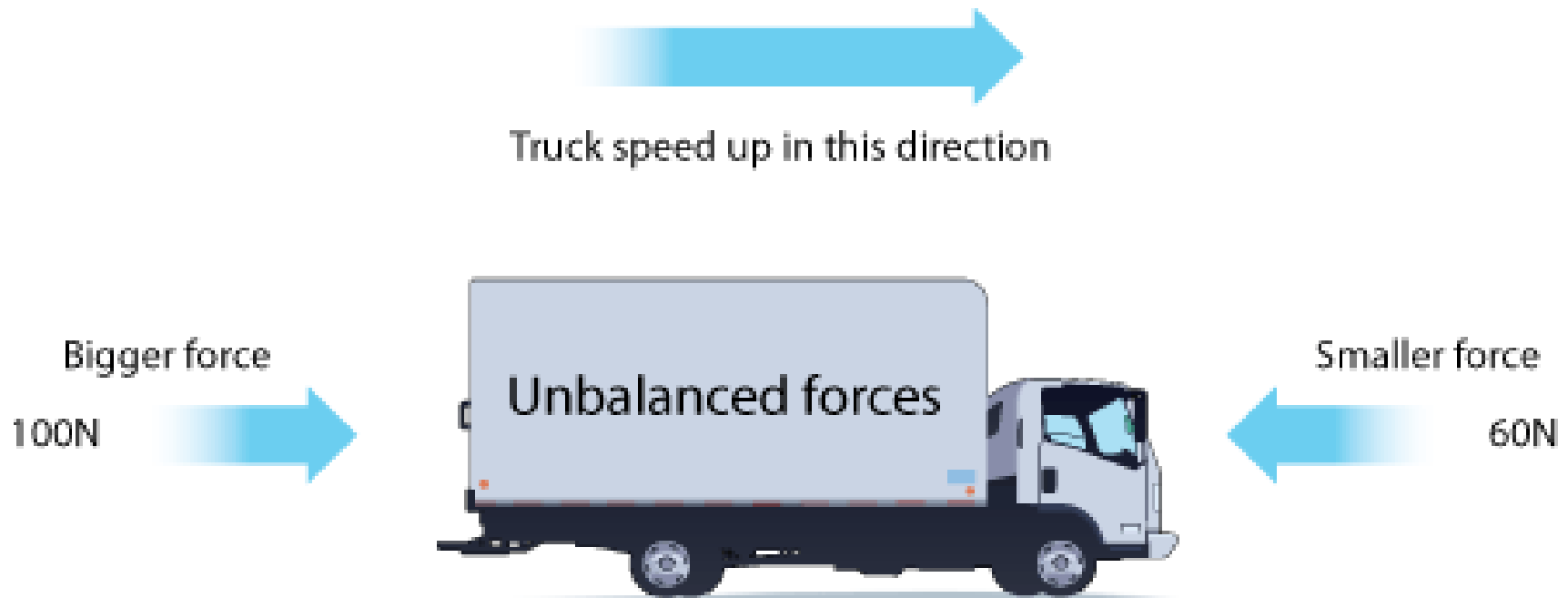
Balanced Forces



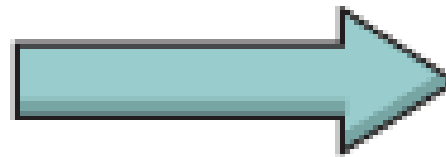
When 2 or more forces cancel each other ($= 0$) and they do not cause a change in motion

Unbalanced Forces

When 2 or more forces do **NOT** cancel each other, net force is not zero and motion will change



truck stays still



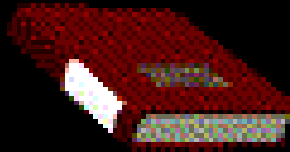
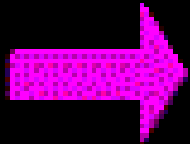
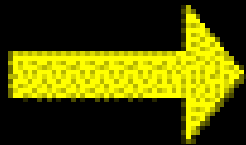
truck moves in this direction



2 forces, same direction

$F_1 =$

8 Newtons



$F_2 =$

6 Newtons

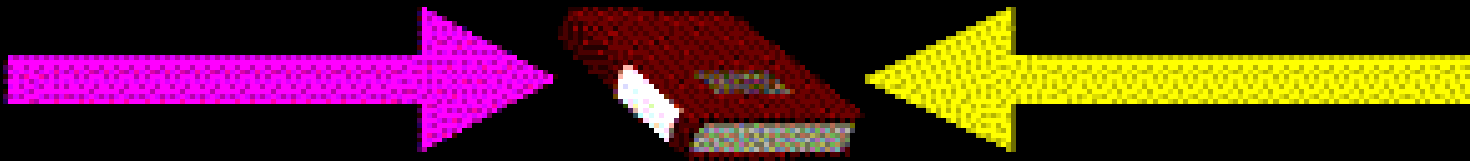
2 forces, opposite directions

$F_2 =$

18 Newtons

$F_1 =$

20 Newtons



2 forces, opposite directions

$F_2 =$

20 Newtons

$F_1 =$

-20 Newtons

