Force and Laws of Motion

✓ push & pull, pressing, lifting, stretching are effects

→ Force is an external agent or cause capable of changing the state of rest or motion of a particular body once applied on it

Eg - lifting a weight; Stretching a Rubber band; Pressing a button

Force is a vector qty

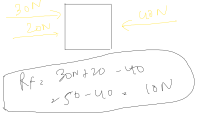
Types of forces

Resultant/Net forces - Summation of all the forces being applied on the body.

Balanced forces :- If the resultant of all the forces acting on a body is zero, the forces are called balanced force.

Unbalanced forces :- If the resultant forces acting on the body is not zero, the forces are called unbalanced force.

Q. Type of body, Resultant force, Direction



Rf, (5+10+10 - 30) = -5N

2) Find the value of x in the balanced force system.

3) Find the value of x if system is an unbalanced force system, with resultant force equal to 23 units towards left

$10 + 2x - 46 = -23$

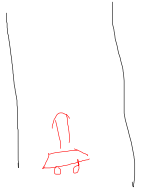
$2x - 36 = -23$

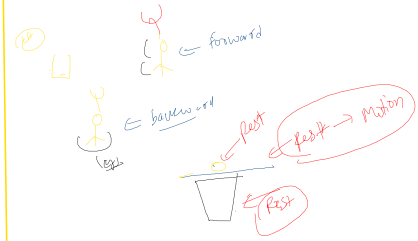
$2x = 13$

$x = 13/2 = 6.5$

Newton's 1st law of motion

→ A body at rest will remain at rest and a body in motion will continue in motion in a straight line with a uniform speed, unless it is compelled by an external unbalanced force to change its state of rest or of uniform motion.





The tendency of a body due to which it resists a change in its state of rest or of uniform motion.

→ Why it is recommended to wear seat belt in the car? & if you wear & if you don't what will be the consequences?

6:20