

Newton's 2nd Law – Guided Notes

Newton's 2nd Law says:

Or as an equation:

OR

F = _____

M = _____

a = _____

If the forces are unbalanced, there is a net force and so the object will accelerate.

Car Example:

$$F_{\text{net}} = ma$$

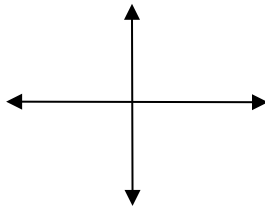
OR

$$\Sigma F = ma$$

Replace F_{net} with the forces acting:

Whatever direction the net force has, is the same direction the acceleration has.

Directions for Physics:



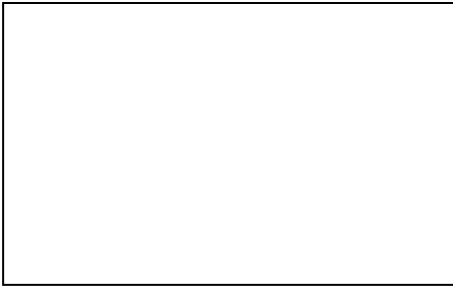
Elevator moving at constant velocity:

Force Diagram

Force Comparison Equation

Elevator accelerating up (JOLT UP):

Force Diagram

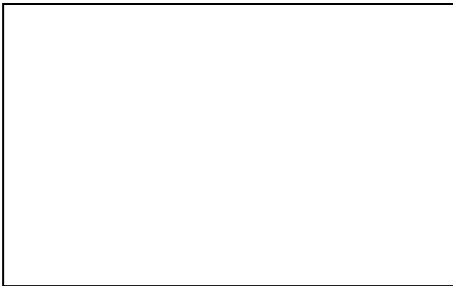


Force Comparison Equation

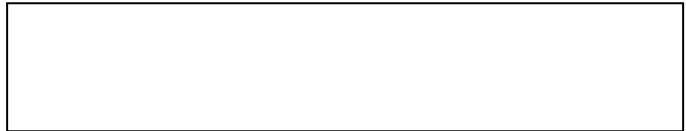


Elevator accelerating down (JOLT DOWN):

Force Diagram



Force Comparison Equation



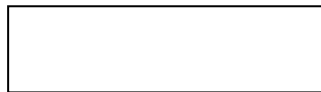
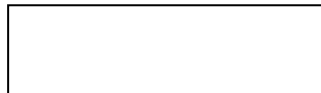
Elevator accelerating up (JOLT UP) – Full Equation and Calculation

$m =$ _____

$g =$ _____

$F_N =$ _____

$$F_{\text{net}} = ma$$



$a =$  m/s/s