

What is a force?
 Motion
 Force is a vector

Contact

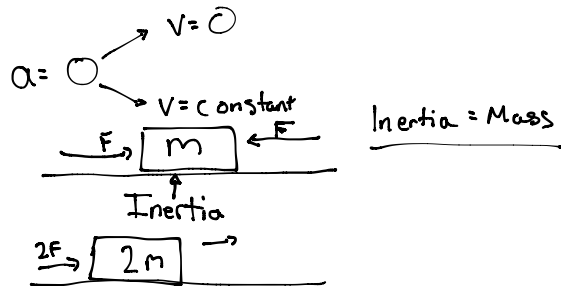
Push
 Pull

Non Contact

Gravity
 Electro-magnetism
 (Field)

Newton's Laws

First Law - Law of Inertia

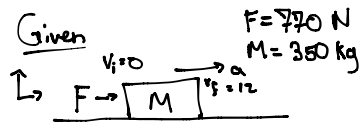


2nd Law
 $\Sigma F = ma$

kg * m/s²
 Newton **N**

Force causes acceleration
 Acceleration is caused by force

Gravity
 Friction
 Tension
 Compression



Find a) a

Solve:

$$F = ma$$

$$770 = 350a$$

$$a = 2.2 \text{ m/s}^2$$

b) $x_f = 0$
 $x_i = \square$
 $v_i = 0$
 $v_f = 12$
 $a = 2.2$
 $t = \boxed{5.45s}$

$v_f = v_i + at$
 $12 = 0 + 2.2t$
 $t = \frac{12}{2.2}$
 $t = 5.45s$

$F_N = \text{Normal force}$

Free Body Diagram

