

**TEST 2****Lois de Newton**

UAM acceleration	UAM velocity	UAM position	Newton's 2nd law
$a = \frac{v_2 - v_1}{t}$	$v = at + v_0$	$x = \frac{1}{2}at^2 + v_0t + x_0$	$F = m \cdot a$

Exercise 1

A body in equilibrium has:

- ☐ no motion
- ☐ no mass
- ☐ no acceleration
- ☐ no force acting on it

Exercise 2

A braking car has:

- ☐ no mass
- ☐ no acceleration
- ☐ no force acting on it
- ☐ a non-zero resultant force

Exercise 3

Action and reaction:

- ☐ are perpendicular
- ☐ are opposite
- ☐ are always equal to zero
- ☐ have distinct intensities

Exercise 4

We call "law of inertia":

- ☐ Newton's first law
- ☐ Newton's second law
- ☐ Newton's third law
- ☐ none of them

Exercise 5 A 60 kg cart is pulled with a force of 120 N on a strait horizontal road.

a) Make a drawing of the situation:

a) Calculate the acceleration of the cart:

b) Calculate its velocity after 4 seconds:

Exercise 6 A trolley has a mass of 10 tons. Initially on rest, it acquires a velocity of 108 km/h after 2 min.

a) Give the mass of the trolley in kg:

b) Give the final velocity of the trolley in m/s:

c) Calculate the acceleration of the trolley:

d) Calculate the force acting on the trolley: