

Nom : _____

PHYS 11



TEST 3	Mouvement rectiligne uniformément accéléré (MRUA)
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acceleration	velocity	position = distance travelled
$a = \frac{v_2 - v_1}{t}$	$v = at + v_0$	$x = \frac{1}{2}at^2 + v_0t + x_0$

Exercise 1

A mobile moves on a straight line at an initial velocity of 4 m/s and has a constant acceleration of 5 m/s² oriented in the **same direction** as the velocity. Calculate:

a) The velocity of the mobile after 6 seconds.	b) The distance travelled after 6 seconds.

If the acceleration of the mobile is now in the **opposite direction** to that of the initial velocity, calculate:

c) The velocity of the mobile after 6 seconds.	d) The distance travelled after 6 seconds.

Exercise 2

A car traveling at 72 km/h constantly brakes until it stops after 5 seconds.

a) What is the distance travelled during the braking?

b) What is its velocity 3 seconds after the start of braking?

Exercise 3

A car is traveling at 108 km/h when the light turns red at a crossroads. If the driver's reaction time is 1 s and the deceleration of the car is 8 m/s^2 as soon as the driver brakes, calculate the distance travelled by the car from the moment the driver sees the red light until the moment the car stops.