

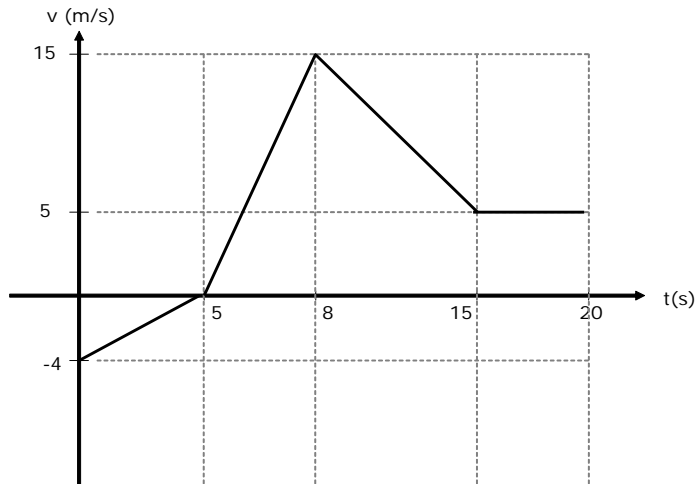
**Mock Exam: KINEMATICS**

Name: \_\_\_\_\_

Course: \_\_\_\_\_

**1. EXERCISE (3 POINTS)**

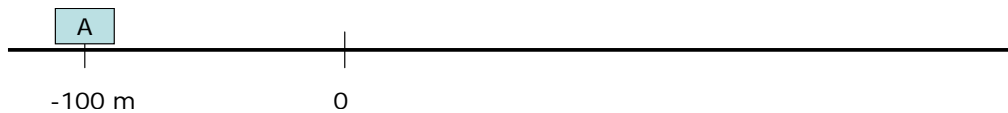
Here you have the v-t graph of a body. Determine



- a) the type of motion in each interval (1 POINT)
- b) the acceleration in each interval (1 POINT)
- c) the displacement in each interval and the total displacement (1 POINT)

**2. EXERCISE (3 POINTS)**

In this picture, you can see the initial position of a body. Its initial velocity is 16 m/s and the acceleration is  $-2 \text{ m/s}^2$ . Determine:



- a) the equation of the position vector (0.5 POINTS)
- b) the initial velocity in Km/h (0.5 POINTS)
- c) the moment and position at which it stops (1 POINT)
- d) the position and velocity when  $t=3 \text{ s}$  and the displacement from the initial moment to  $t=3 \text{ s}$ . (1 POINT)

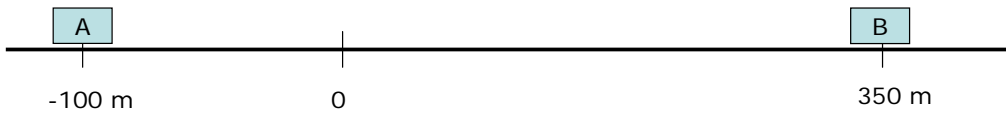
**3. EXERCISE (2 POINTS)**

**A body is thrown horizontally with an initial velocity of 90 Km/h from a point that is 40 m above the floor. Determine**

- a) the horizontal position when the body hits the floor (1 POINT)
- b) the velocity (the vectorial expression, magnitude and angle) when the body hits the floor (1 POINT)

**4. EXERCISE (2 POINTS)**

**Two bodies start moving at the same time, along the "X" axis. The body called "A" is moving towards the right at a constant velocity of 16 m/s and "B" is moving to the left with an initial speed of 2 m/s and an acceleration of  $-2 \text{ m/s}^2$ . Determine:**



- a) when and where they will pass each other (1 POINT)
- b) at the moment of passing each other, the velocity of each one (1 POINT)