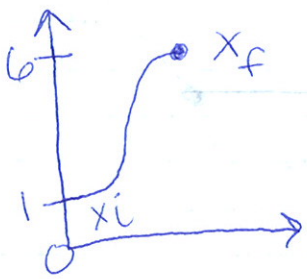
Cornell Notes

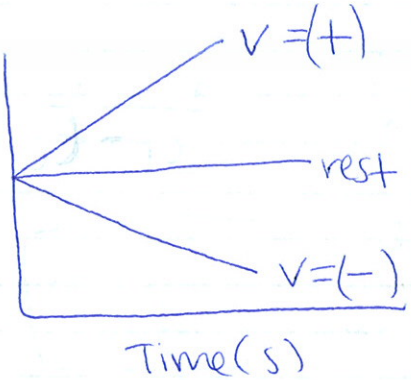
Name	Ashley Martinez	Date	9/1/11
Topic	Acceleration	Class/ Suject	Physics

Quiz

HW Check

11:15am





11:30am

Tomorrow 9/2/11
on 2 past hw assignments

1) Displacement $\Delta x = x_f - x_i$

Total Distance = 6.0m

$x_f = 6.0\,m \quad x_i = 1.0m$

$\Delta x = 6.0m - 1.0m = +5.0m$
~~Vector~~

← (−) → (+)

- magnitude (numerical value)
- direction (+, −)

2) Slope

3) Parallel Line @ rest
Positive velocity: ↗ up
Negative velocity: ↘ down

5a) V decreasing = (0 to t_1), (~~t_1 to t_2~~), (t_4 to t_5)

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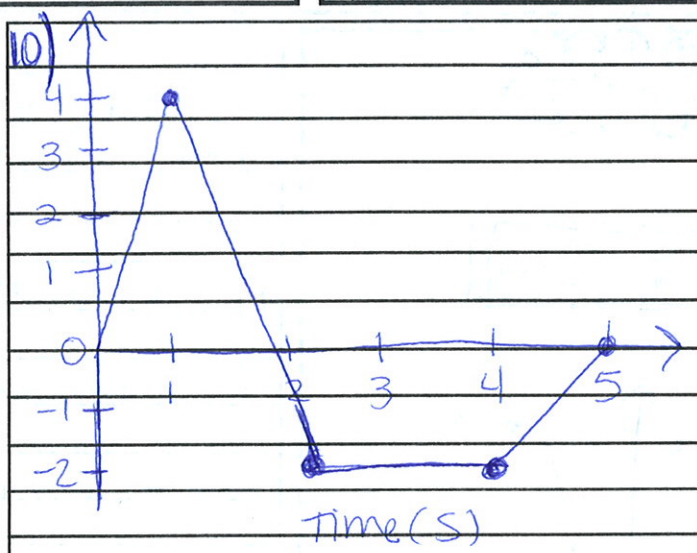
Total distance = 2m →

Δx = 0m →

10)



Displacement:

$\Delta x = x_f - x_i$

$\Delta x = -2 - 0$

$\Delta x = -2.0m$

10 B)

average velocity

$v_{avg} = \frac{\Delta x}{\Delta t} = \frac{x_f - x_i}{t_f - t_i}$

$\Delta x = -2.0$

$\Delta t = 3 sec.$

$= \frac{-2}{3} m/s$

(2)

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11:52 am

Acceleration objectives:

Acceleration – is the rate at which velocity changes over time.

$$a_{avg} = \frac{\Delta v}{\Delta t} = \frac{v_f - v_i}{t_f - t_i}$$

average acceleration = $\frac{\text{change in velocity}}{\text{time required for change}}$.

An object accelerates if its speed, direction or both change.

Acceleration has direction + magnitude. Thus, acceleration is a vector quantity.

Units for Acceleration

m/s^2

meters per seconds^2

$$a_{avg} = \frac{\Delta v}{\Delta t} = \frac{m/s}{s} = \frac{m}{s} \div s =$$

$$\frac{m}{s} \cdot \frac{1}{s} = \boxed{\frac{m}{s^2}}$$

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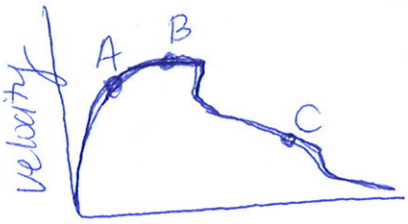
Changes in Velocity



Consider a train moving to the right, so that the displacement and the velocity are positive.

The slope of the velocity-time graph is the average acceleration

When velocity in the positive direction is increasing, the acceleration is positive, as at (A.)

When the velocity is constant there is no acceleration, as at (B)

When the velocity in the positive direction .... (C)

Velocity + acceleration

v	a	Δx	Motion
+	+		speeding up
−	−		speeding up
+	−		slowing down
−	+		slowing down
− or +	0		constant velocity
0	− or +		speeding up from rest
0	0		remaining @ rest