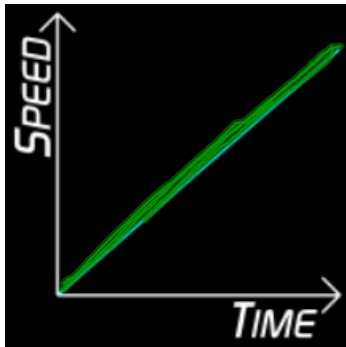# Monday May 2, 2011

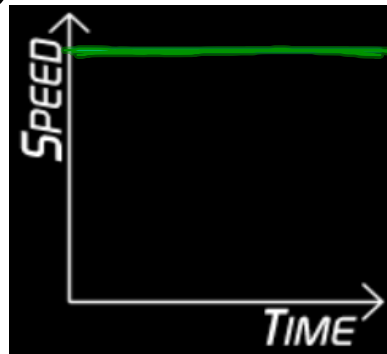## cont notes on graphing acceleration
Warm-Up

Which of the following graphs represents constant acceleration (A) or B
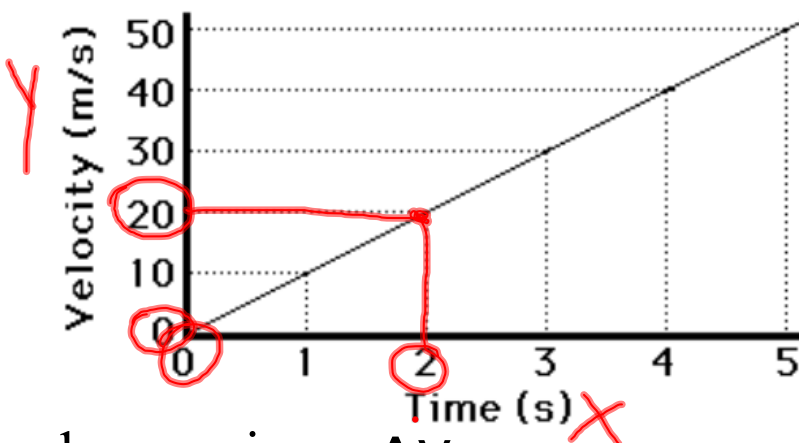Which of the following graphs represents zero acceleration A or (B)

A

B

Speed - Time Graphs

You can find acceleration of any speed time graph by finding the SLOPE of the line.

to find acceleration take two points from the graph.

$$a= \frac{\text{speed 2 } (v_2)\text{-speed 1}(v_1)}{\text{time 2 } (t_2)\text{- time 1 } (t_{-1})}$$
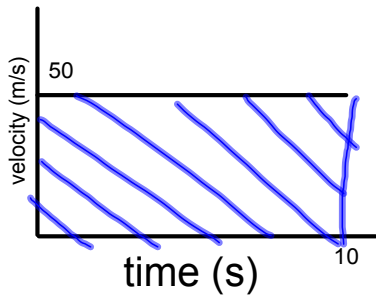
$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta v}{\Delta t}$$

Find the acceleration of this object

$$a= \frac{v_2 - v_1}{t_2 - t_1} = \frac{20 - 0}{2 - 0} = 10 m/s^2$$

The area under the line in a speed-time graph is equal to the distance travelled during the time interval.

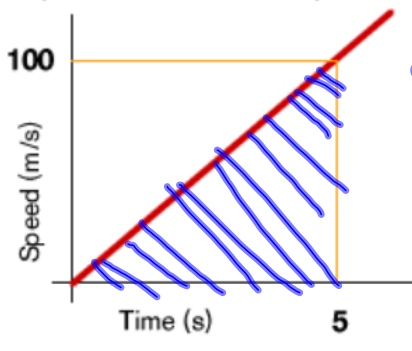This distance can be found using the following formulas:

(for a graph with zero acceleration)
(horizontal line creating a square under ht shape)

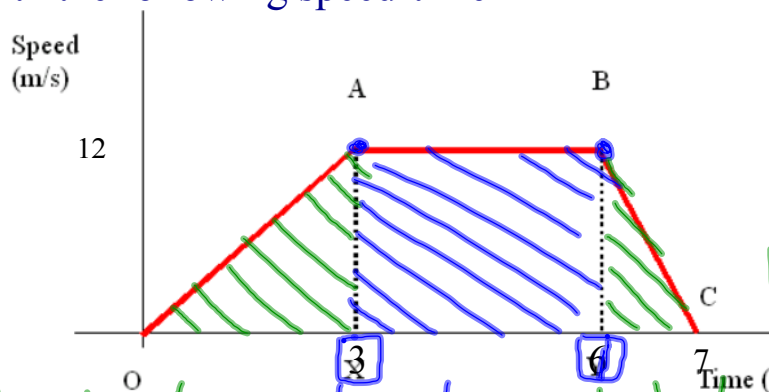$d = t \times v$

$d = (10 \, s)(50 \, m/s)$

$d = 500 \, m$

(for a graph with constant acceleration)
(a line moving upwards or downwards creating a triangle under the graph)

$d = \dfrac{1}{2} t \times v$ $= \dfrac{1}{2}(5)(100) = 250 \, m$

Speed-Time Graph

velocity (m/s)
50
time (s)   10

Speed (m/s)
100
Time (s)   5

Find the total distance travelled for an object with the following speed-time graph.

Speed (m/s)

12

A   B

                                    C

O   3   6   7   Time (

$d = \dfrac{1}{2} vt$

$= \dfrac{1}{2}(3)(12)$

$= 18 \, m$

$d = vt$

$d = (3)(12)$

$= 36 \, m$

$d = \dfrac{1}{2} vt$

$= \dfrac{1}{2}(1)(12)$

$= 6 \, m$

$Total = 18 m + 36 m + 6 m$

$= 60 m$

Complete
pg 393 #1-6, 11

Attachments

Answers Extra Practice Acceleration WS.notebook

answers acceleration worksheet.notebook

answers pg 393 #1-4a, 5,6a,b,11a.notebook

answers pg 393 #4b,5b,6c,11b.notebook