Monday, October /12
Science 10

Announcements

1. Quiz - (Significant Digits, Certain/Uncertain Digits, Rules, Rearranging Equations, Conversions)
2. Tumble Buggy Activity - Graphs
3. Time
4. Average Speed, Instantaneous Speed, Constant Speed

Stopped Here

5. Understanding Concepts - Page 358: #3-6, 8

*Page 358: #7, 9
Page 359: #10

Time (Page 340)

Time is duration between two events and is usually measured in seconds, minutes, or hours.

SI base unit: s

Instantanous Speed (Page 355)

Instantaneous speed is the speed at which an object is travelling at a particular instant.

http://www.youtube.com/watch?v=46c1ZAXC5Qc&feature=related

Constant Speed (Page 355)

An object has constant speed if its instantaneous speed stays the same over a period of time.

Type of Motion: Uniform Motion

Average Speed (Page 354)

average speed = $\frac{\text{total distance}}{\text{total time}}$

$$v_{ave} = \frac{\Delta d}{\Delta t}$$

v_{ave} - speed (m/s)

Δd - change in distance (m)
- elapsed distance
- distance

Δt - change in time (s)
- elapsed time
- time

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Sample Problem 1

Eiko skates to school, a total distance of 4.5 km (Figure 2). She has to slow down twice to cross busy streets, but overall the journey takes her 0.62 h. What is Eiko's average speed during the trip?

$\Delta d = d = 4.5\ km$

$\Delta t = t = 0.62\ h$

$v_{ave} = ?$ [-0.5]

(1)

$v_{ave} = \frac{d}{t}$ (1)

$v_{ave} = \frac{4.5\ km}{0.62\ h}$ (1)

(1) $v_{ave} = 7.3\ \frac{km}{h}$ R

WS: The average speed was $7.3\ \frac{km}{h}$. (1)

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Sample Problem 2

Imagine that you are riding on the Cariboo Dayliner, in the dome car of course (**Figure 3**), and you see a sign that reads 120 km. You decide, after seeing several such signs, that you are going to measure the elapsed time between the next two signs, which are 10 km apart. You read the elapsed time as 390.6 s. Determine the speed of the train in kilometres per hour during the elapsed time.

d =

t =

v_{ave} =

p3.

Figure 3

The Cariboo Dayliner yields a scenic view of Canada.

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Sample Problem 3

Kira is trying to predict the time required to ride her bike to the nearby beach. She knows that the distance is 45 km and, from other trips, that she can usually average about 20 km/h, including slowing down for climbing hills. Predict how long the trip will take.

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