Thursday, November 15/12
Science 10

Announcements

Miramichi Hoop Classic - Friday PM

Students go to fourth period for attendance. They may purchase a ticket for $2.00 from their fourth period teachers then attend the basketball games in the afternoon.

1. Bell Work - Multiple Choice - See next page.
2. Worksheet: Distance, Displacement, Ave. Speed and Ave. Vel.
3. Topics - Chapter 11 Test
4. Chapter 11 Review - Page 442 - #1, 2, 4, 5, 9, 10
5. Explore an Issue - Athletes on the Edge - Page 430
6. Unit 3 - Chapter 12

http://www.youtube.com/watch?v=UV_X2B5OK1I

http://www.rcdb.com/

Bell Work - Thursday, Nov. 15/12

1. Which of the following is a scalar quantity?

   a) velocity
   b) distance
   c) acceleration
   d) position

2. Which of the following is not a unit of velocity?

   a) m/s
   b) km/h
   c) m/s^2
   d) km/s

3. Which of the following is a negative direction?

   a) west
   b) north
   c) right
   d) east

4. A scalar quantity has

   a) size and direction
   b) size or direction
   c) neither size nor direction
   d) size only

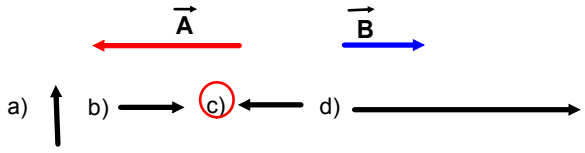
5. There are ___ methods for finding a resultant displacement.

   a) one
   b) two
   c) three
   d) four

6. Which scale below would be appropriate when drawing a displacement of 35 km/h, west?

   a) 1 cm = 35 km/h
   b) 5 cm = 1 km/h
   c) 1 cm = 5 cm
   d) 1 cm = 5 km/h

7. Which of the following vectors represents the resultant of vectors A and B below?



8. Which of the following can be used to calculate a resultant displacement?

   a) $\Delta\vec{d}_R = \Delta\vec{d}_1 + \Delta\vec{d}_2$
   b) $\Delta\vec{d}_R = \Delta\vec{d}_2 - \Delta\vec{d}_1$

#1 $0.069\ \frac{km}{s}$, south

⇒ $t = 25\ s$

$\Delta \vec{d} = -1.73\ km$

$\vec{V}_{av} = ?$

$\vec{V}_{av} = \frac{\Delta \vec{d}}{t}$

$\vec{V}_{av} = \frac{-1.73\ km}{25\ s}$

$\vec{V}_{av} = -0.069\ \frac{km}{s}$

[S]

Skip #2

#3. $t = 2.0h$

$\Delta \vec{d}_1 = +1.00 km$

$\Delta \vec{d}_2 = -3.00 km$

$\Delta \vec{d}_3 = -2.00 km$

$\Delta \vec{d}_4 = -6.00 km$

a) $d = 1.00km + 3.00km + 2.00km + 6.00k$

$d = 12.00 km$

b) $V_{ave} = \frac{d}{t}$

$V_{ave} = \frac{12.00 km}{2.0 h}$

$V_{ave} = 6.0 \frac{km}{h}$

c) $\Delta \vec{d}_R = \Delta \vec{d}_1 + \Delta \vec{d}_2 + \Delta \vec{d}_3 + \Delta \vec{d}_4$

$\Delta \vec{d}_R = +1.00 km - 3.00 km - 2.00 km + 6.00k$

$\Delta \vec{d}_R = +2.00 km$

d) velocity $\vec{V}_{av} = \frac{\Delta \vec{d}_R}{t}$ || speed $V_{ave} = \frac{d}{t}$

#4 a) 2.0m/s

b) 2.0m [W]

c) 2.8 m/s

d) 14.0m

e) $0.40 \frac{m}{s}$ [W]

⇒ 4. a) $\Delta \vec{d}_1 = 6.0m$ [E]

$t_1 = 3.0s$

$\Delta \vec{d}_2 = 8.0m$ [W]

$t_2 = 2.0s$

a) $v = \frac{d}{t}$

$v = \frac{6.0m}{3.0s}$

$v = 2.0 \frac{m}{s}$

b) $\Delta \vec{d}_R = +6.0m - 8.0m$

$\Delta \vec{d}_R = -2.0m$

c) $V_{ave} = \frac{d}{t}$

$V_{ave} = \frac{14.0m}{5.0s}$

$V_{ave} = 2.8 \frac{m}{s}$

d) total $d = 6.0 + 8.0m$

$= 14.0m$

e) $\vec{V}_{ave} = \frac{\Delta \vec{d}_R}{t}$

Chapter 11- Review

1. Vector quantities have size and direction.
   ie/ displacement 15Km [E]
   Velocity 10m/s, West

2. Scalar quantities have size.
   ie/ time (10s)
   distance (54m)
   speed ($15\ \frac{km}{h}$)

*4. a) position
   b) speed ⇒ scalar ⇒ no dir.
   ($\frac{m}{s}$) ($\frac{km}{h}$)
   c) distance ⇒ scalar ⇒ no dir.
   (m) (km)
   d) displacement
   e) velocity ⇒ vector ⇒ dir ✓.

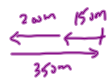
*5. ① Symbols ($\vec{d}$) } vector
   (notation)
   ② arrows ⇒ vector diagram.

*9. 80km [W] ⇒ displacement.

Distance unknown → we don't know his path.

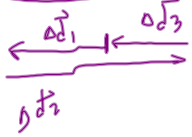
10. a) $\Delta\vec{d}_R = 0$

b) $\Delta\vec{d}_1 = -200m$
$\Delta\vec{d}_2 = +350m$
$\Delta\vec{d}_3 = -150m$



$\Delta\vec{d}_R = \Delta\vec{d}_1 + \Delta\vec{d}_2 + \Delta\vec{d}_3$
$\Delta\vec{d}_R = -200m + 350m - 150m$
$\Delta\vec{d}_R = 0m$

c) scale 1cm = 50m
use a ruler



Chapter 11 - Test Topics

→ physical quantities
ie/ time, distance, velocity, speed, volume, position, displacement, etc

→ types of physical quantities

physical quantity
- scalar → size
  - speed
  - distance
  - time
- vector → size + direction
  - velocity
  - acceleration
  - position
  - displacement

→ directions

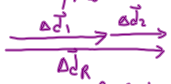
positive	negative
E	W
N	S
right	left
up	down

→ position: $\vec{d}$
⇒ 100 Acre Wood
⇒ map of MVHS

→ displacement: $\Delta\vec{d}$
$\Delta\vec{d} = \vec{d}_2 - \vec{d}_1$

→ Vector diagrams
① Scale 1cm =
① draw body of the arrow to scale
① add arrowhead
① label vector

→ Head-to-foot // Head-to-tail method



→ 3 methods for finding $\Delta\vec{d}_R$.
1. scale diagram
2. algebraic
   $\Delta\vec{d}_R = \Delta\vec{d}_1 + \Delta\vec{d}_2$
3. combined method
   → sketch
   → formula

→ velocity (speed + direction)

$$\vec{V} = \frac{\Delta\vec{d}}{t}$$

→ average velocity

$$\vec{V}_{av} = \frac{\Delta\vec{d}_R}{t}$$