Name_____

Date_____**Pd**____

Physical Science – Kinematics Vocabulary

The Physics Classroom Tutorial

Go to the links given. Read the tutorial. Define the words listed. Answer all questions with pull-down menus and check your answers. Show your work and answers on this sheet.

Lesson 1: Describing Motion with Words

Introduction to the Language of Kinematics
http://www.physicsclassroom.com/Class/1DKin/U1L1a.cfm

Define:

- mechanics

- kinematics

Scalars and Vectors
http://www.physicsclassroom.com/Class/1DKin/u1l1b.cfm

Define:

- scalars

- vectors

Check Your Understanding

1. To test your understanding of this distinction, consider the following quantities listed below. Categorize each quantity as being either a vector or a scalar. Click the button to see the answer.

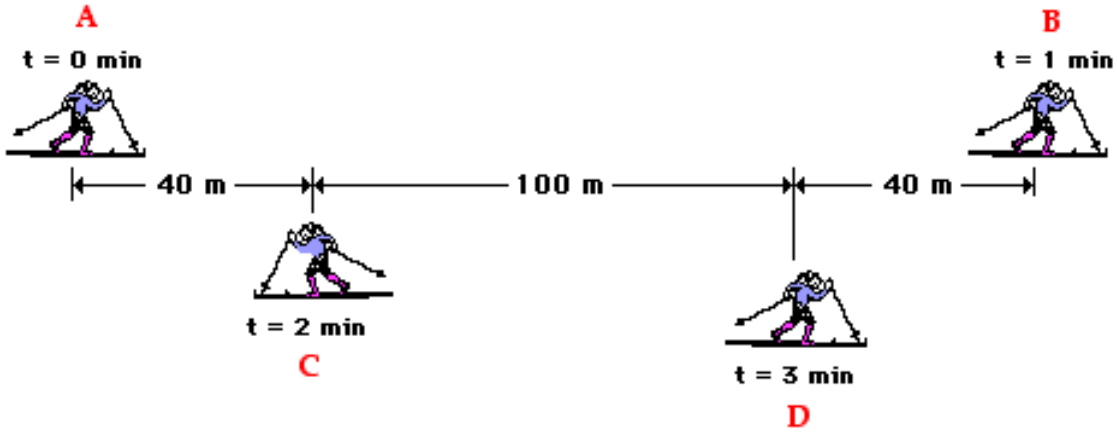
Quantity	**Category**
a. 5 m	_____
b. 30 m/sec, East	_____
c. 5 mi., North	_____
d. 20 degrees Celsius	_____
e. 256 bytes	_____
f. 4000 Calories	_____

Distance and Displacement
http://www.physicsclassroom.com/Class/1DKin/u1l1c.cfm

Define:

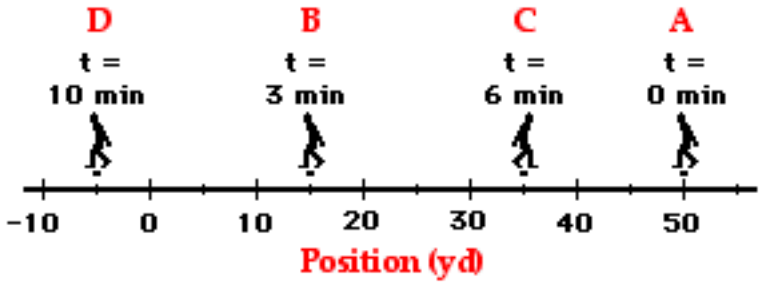
- distance
- displacement

The diagram below shows the position of a cross-country skier at various times. At each of the indicated times, the skier turns around and reverses the direction of travel. In other words, the skier moves from A to B to C to D. Use the diagram to determine the resulting displacement and the distance traveled by the skier during these three minutes.



distance = _____ displacement = _____

A football coach paces back and forth along the sidelines. The diagram below shows several of coach's positions at various times. At each marked position, the coach makes a "U-turn" and moves in the opposite direction. In other words, the coach moves from position A to B to C to D. What is the coach's resulting displacement and distance of travel?



distance = _____ displacement = _____

Check Your Understanding

1. What is the displacement of the cross-country team if they begin at the school, run 10 miles and finish back at the school?

2. What is the distance and the displacement of the race car drivers in the Indy 500?

Speed and Velocity
http://www.physicsclassroom.com/Class/1DKin/u1l1d.cfm

Define:

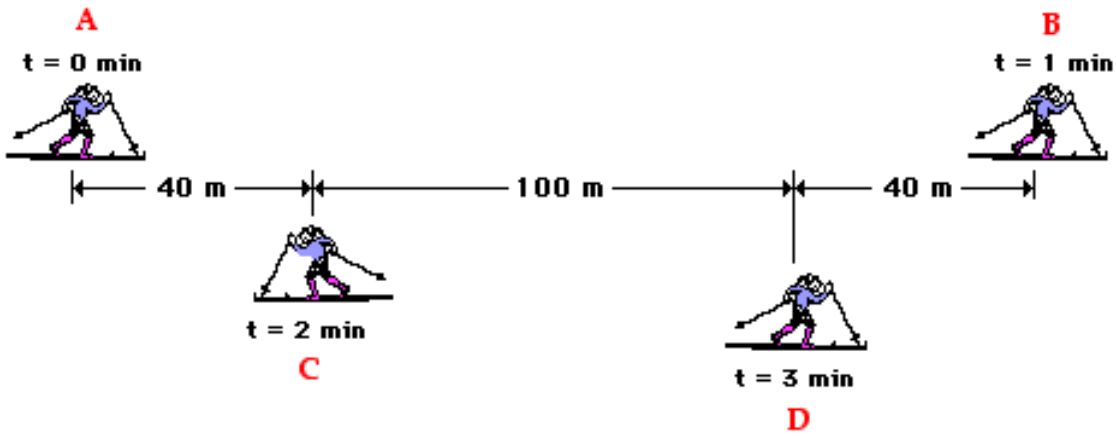
- speed
- velocity
- Instantaneous Speed
- Average Speed

Give the equation for:

- Average Speed

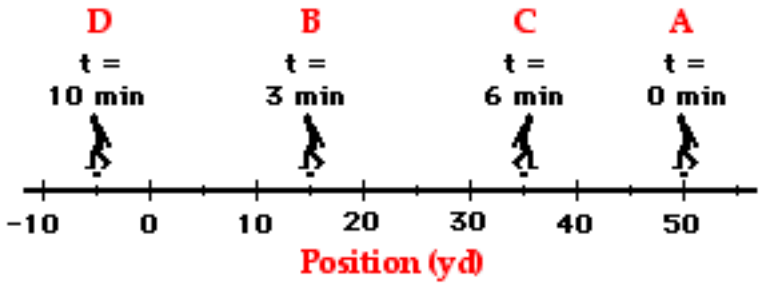
- Average Velocity

.The diagram below shows the position of a cross-country skier at various times. At each of the indicated times, the skier turns around and reverses the direction of travel. In other words, the skier moves from A to B to C to D. Use the diagram to determine the average speed and the average velocity of the skier during these three minutes.



speed = _____ velocity = _____

A football coach paces back and forth along the sidelines. The diagram below shows several of coach's positions at various times. At each marked position, the coach makes a "U-turn" and moves in the opposite direction. In other words, the coach moves from position A to B to C to D. What is the coach's average speed and average velocity?



speed = _____ velocity = _____

Acceleration
http://www.physicsclassroom.com/class/1DKin/Lesson-1/Acceleration

Define:

- acceleration

- constant acceleration

Give the equation for calculating average acceleration:

What two things does the direction of the acceleration vector depends on?

1.

2.

What are two cases when an object can have a positive acceleration?

1.

2.

What are two cases when an object can have a negative acceleration?

1.

2.

Check Your Understanding

To test your understanding of the concept of acceleration, consider the following problems and the corresponding solutions. Use the equation for acceleration to determine the acceleration for the following two motions.

Practice A

Time (s)	Velocity (m/s)
0	0
1	2
2	4
3	6
4	8

Practice B

Time (s)	Velocity (m/s)
0	8
1	6
2	4
3	2
4	0