Force and Motion Test A

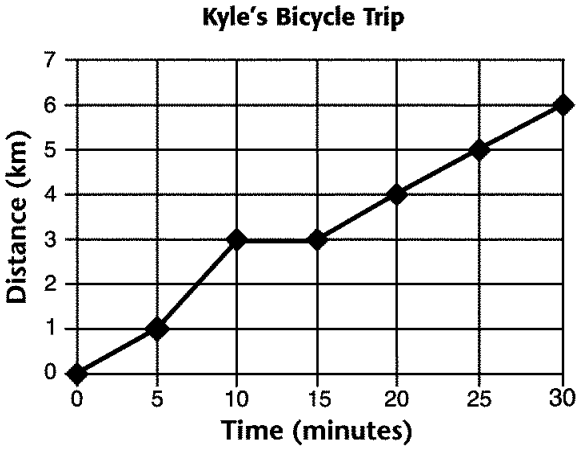
1. Which of these best describes motion?
    a) Distance divided by time
    b) Speed and direction
    c) Change in velocity
    d) Change in position compared to a reference point

2. Which two things work together to determine the speed of an object?
    a) Distance and time
    b) Motion and reference point
    c) Acceleration and velocity

3. A walker hikes 6 km in 2 hrs, stops to rest for 1 hour, then walks another 2 km in 1 hour. What is the hiker's average speed over the entire trip?(Show your work below)

a) 2 km/h **Show your work on the answer sheet.**
b) 1 km/h
c) 4 km/h

Use the graph below to answer the following question.



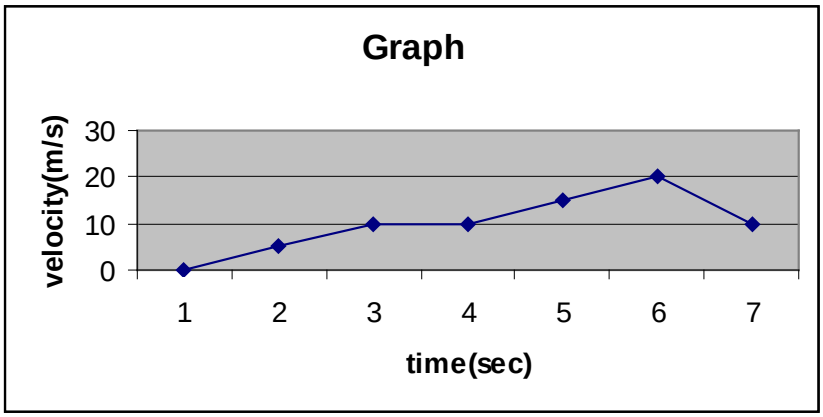
4. During which interval was Kyle's speed fastest?
    a) 0-5 min
    b) 5-10 min
    c) 10-15 min

5. Describe Kyle's speed during the 10-15 minute interval.

6. Which best describes a force?
    d) A push or pull on an object
    e) Something strong
    f) Something heavy

7. If two objects cover the same distance, but object A takes 50 seconds while object B takes 30 seconds, which object is going faster?

a) Object A
b) Object B



8. The graph above shows which of the following?

a) speed
b) acceleration
c) velocity

9. What happened between 3 and 4 seconds?

a) stopping
b) speeding up
c) constant speed

10. Which best describes instantaneous speed?

a) Direction and speed
b) An object's speed at a particular moment
c) Total distance divided by total time

11. Which best describes a force?

a) Scalar
b) Vector

12. Write a sentence contrasting speed and velocity (telling how they are different.)

Use the graph below to answer questions 13&14.

13. (Yes)(No) Is this object accelerating?

14. (B)(U) Are the forces acting on this object balanced or unbalanced?

15-18: Label each as a scalar or a vector by circling S for scalar or V for vector.

15. (S)(V) 10N north

16. (S)(V) 25 km/h

17. (S)(V) 25m/s at 27 degrees

18. (S)(V) speed

Mr. Aronin and Mr. Tomczyk are fighting over a poetry book in tug-o-war fashion. Mr. Aronin is pulling on the book with a force of 75N east while Mr. Tomczyk is pulling on the book with a force of 25N west.

19. What is the net force acting on the book?
    a) 25N west
    b) 50N east
    c) 50N west
    d) 100N west

20. If the book were to move, based on what you know, which direction will the book go?
a) East
b) West
c) Up