Name: _____ Class: _____ Date: _____ ID: A

Unit 1 Physical Science Test Study Guide

*I will Pick 30 questions from this study guide for the test! plus all of Chapter 2 TEST

Multiple Choice

Identify the choice that best completes the statement or answers the question.

Answer below each question

____ 1. A soccer ball takes 20 s to roll 10 m. What is the average speed of the soccer ball?

____ 2. describe how velocity changes with time

____ 3. What is the term for speed at any instant in time?

____ 4. Speed is the rate of change in _____.

____ 5. To describe velocity you need to know _____.

____ 6. When you graph the motion of an object, you put a on the horizontal axis and b on the vertical axis.

a)

b)

____ 7. Acceleration involves a change in _____.

____ 8. The distance traveled divided by the time taken to travel the distance is _____.

____ 9. Motion is change in _____.

____ 10. _____ is rate of change of position.

____ 11. You hear that a storm is moving 15 km/h north. You have been given the storm's _____.

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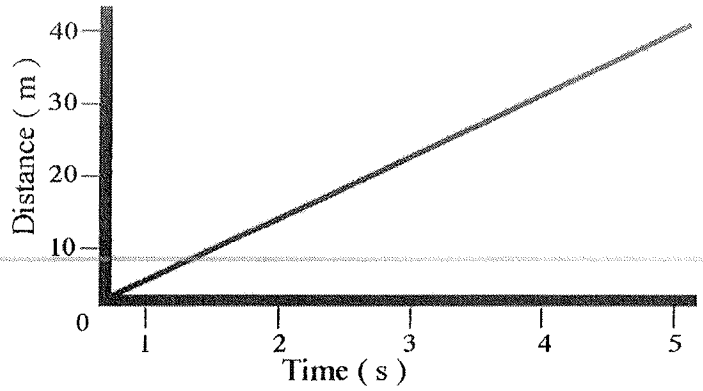

Figure 2

____ 12. Figure 2 summarizes the motion of an object. Write a sentance to describe the motion of the object.

____ 13. A jet plane traveled for 5 hours at 600 kilometers per hour. Write the equation which should be used to find the distance the jet plane traveled?

____ 14. Your mother picks you up at school. It takes 10 minutes for the 5-km drive home. What can you calculate a value for with the information given?

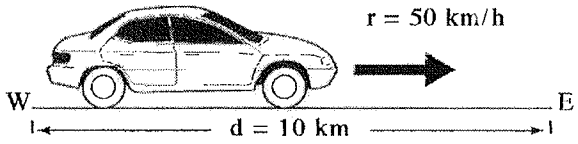

Figure 4

____ 15. Figure 4 summarizes the motion of a car. What is the velocity of the car?

____ 16. Figure 4 summarizes the motion of a car. If the car's speed is an average speed, what is the least amount of time the car will need to cover the distance given?

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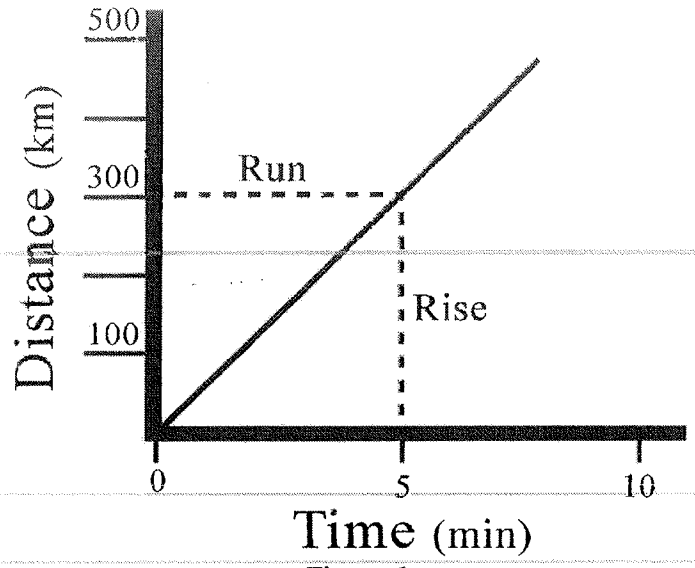


Figure 6

____ 17. Figure 6 is a graph that summarizes the motion of a person who walked at a constant speed for 10 minutes. What is the slope of the graph?

____ 18. List the important parts of giving a set of directions:

____ 19. Which of the following measurements would **not** be used to solve for average speed?
a) total distance
b) Instantaneous speed
c) total time
d) starting location

Completion
Complete each statement.

20. The speed you read from your speedometer is your _____.

21. A distance-time graph shows a horizontal line. This means that the velocity is _____.

22. Three ways to accelerate an object are to _____, _____, or _____.

23. _____ is the change in velocity divided by the change in time.

24. Speeding up, slowing down, and going around curves are examples of _____.

25. The average speed of a cat that runs 1 kilometer in 2 minutes is _____ m/s.

Short Answer

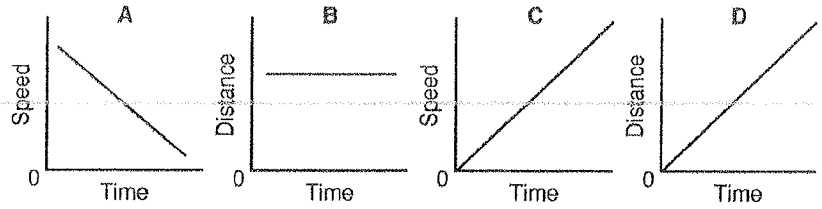
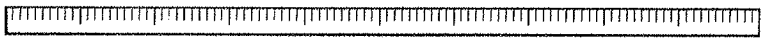


Figure 5-1

26. Which one of the graphs in Figure 5-1 represents a car moving at a constant speed?

27. Which one of the graphs in Figure 5-1 represents a car whose speed is increasing?



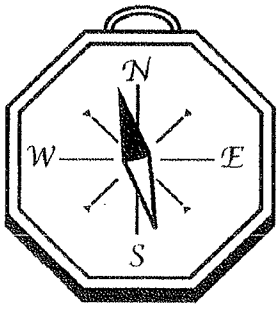


Figure 10

28. Li has chosen the instruments shown in Figure 10 for a lab on motion. Which other instrument should Li add to the items shown? Justify your answer.

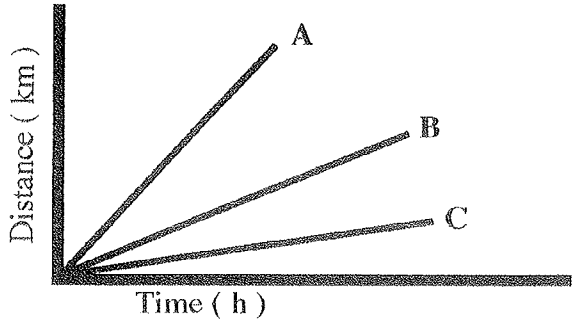


Figure 11

29. Look at Figure 11. Which line represents travel at the fastest speed? Justify your answer.

Problem

30. A car goes from 80 km/h to 20 km/h in 0.5 h. What is the acceleration in km/h²?"

31. A sports car traveled at an average speed of 100 km/h for 45 min. Remember, average speed = total distance/total time. What was the total distance the sports car covered during the 45-minute period?

Modified True/False

Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.

____ 32. Motion is a change in direction. _____

____ 33. If you travel through a city and find that you travel 5 km in 30 minutes, you could say that your constant speed is 6 km/h. _____

____ 34. A line on a speed-time graph with a steep slope indicates a greater speed. _____

____ 35. When you run around a track at 5 km/h, your velocity is constant. _____

____ 36. The slope of the line on a speed-time graph tells the speed. _____

____ 37. The speed you read on your speedometer is the constant speed. _____

____ 38. When you ride your bike around a corner at 10 m/s, you are accelerating. _____

____ 39. To determine if an object has changed position, you need to know it's position relative to another object.
_____

Essay

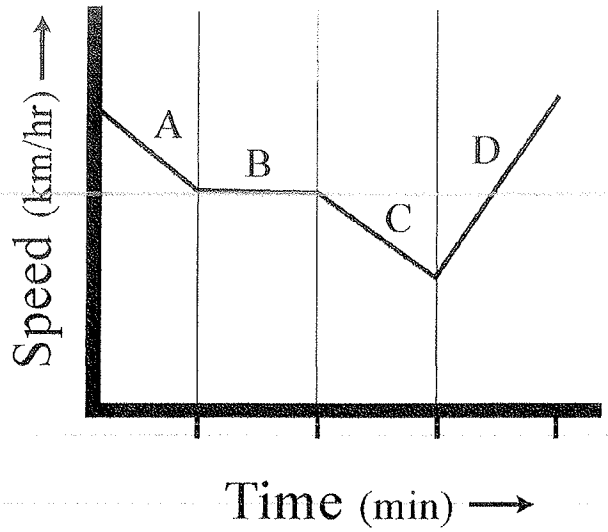


Figure 12

40. Figure 12 shows how the motion of an object changed. Discuss the nature of the motion in each of the four segments of the graph line.

41. Figure 12 summarizes the motion of an object. Discuss the overall motion of the object, and then predict what kind of object could have produced the graph.

FROM CHAPTER 2

1) Give an example of a contact force.

2) If the net force is zero, what else is always true?

3) Describe Newton's 1st law of Motion.

Define:

Force

Net Force

Balanced Forces

Gravity

Weight

Friction

Directions: *Respond to each question or statement in the space provided.*

1. Estrella is riding her bike. She rides on cement, then on rough gravel. She must pedal much harder on the gravel than on the cement. **Define** the force that causes Estrella to pedal harder on the gravel.

2. **Explain** If you and a friend ride bumper cars at the fair, what happens, in terms of Newton's third law, when they collide?

3. A golf player hits a ball with his club. The ball goes up in the air, but then it begins to slow down and fall. **Define** the force that causes the ball to fall.