

## Chapter 3

## CHAPTER REVIEW

# ● Exploring Motion and Forces

## Part A. Vocabulary Review

Complete the statements below by choosing the correct key term(s) from the following list. Write the correct term(s) in the blank to the left of each statement.

acceleration  
friction  
newtons

force  
net force  
weight

keeps  
velocity  
distance

speed  
balanced forces  
inertia

average speed  
gravity  
seat belt

- \_\_\_\_\_ 1. \_\_\_\_\_ is the rate of change in position.
- \_\_\_\_\_ 2. Total distance traveled divided by total time of travel is \_\_\_\_\_.
- \_\_\_\_\_ 3. \_\_\_\_\_ describes both speed and direction.
- \_\_\_\_\_ 4. The rate of change of velocity is called \_\_\_\_\_.
- \_\_\_\_\_ 5. A person wearing a(n) \_\_\_\_\_ becomes "part" of the car.
- \_\_\_\_\_ 6. A(n) \_\_\_\_\_ is a push or pull one body exerts on another body.
- \_\_\_\_\_ 7. A(n) \_\_\_\_\_ on an object always changes the velocity of the object.
- \_\_\_\_\_ 8. Forces that are equal in size and opposite in directions are called \_\_\_\_\_.
- \_\_\_\_\_ 9. The tendency of an object to resist any change in its motion is called \_\_\_\_\_.
- \_\_\_\_\_ 10. Newton's first law of motion states that an object moving at a constant velocity \_\_\_\_\_ moving at that velocity unless a net force acts on it.
- \_\_\_\_\_ 11. The force that opposes motion between two surfaces that are touching each other is called \_\_\_\_\_.
- \_\_\_\_\_ 12. \_\_\_\_\_ is the force that every object in the universe exerts on every other object.
- \_\_\_\_\_ 13. An object's \_\_\_\_\_ is the measure of the force of gravity on that object.
- \_\_\_\_\_ 14. The amount of gravitational force between two objects depends on their masses and the \_\_\_\_\_ between them.
- \_\_\_\_\_ 15. Weight is measured in units called \_\_\_\_\_, while mass is measured in units called grams and kilograms.

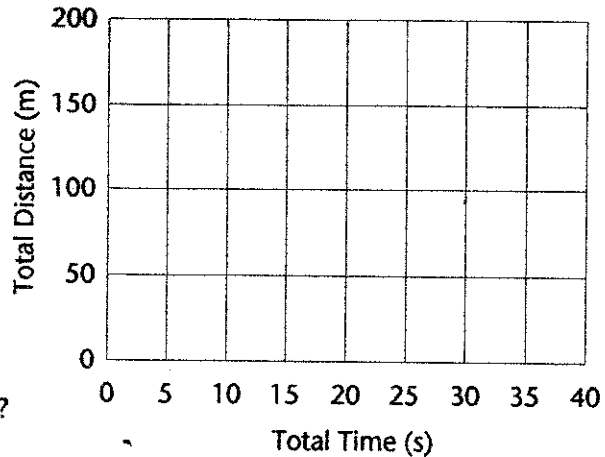
## Chapter 3 Review (continued)

### Part B. Concept Review

1. If Karen rode her bicycle 5 km to school in 30 minutes, what was her average speed? Give your answer in km/h.

2. Graph the following data of a car trip.

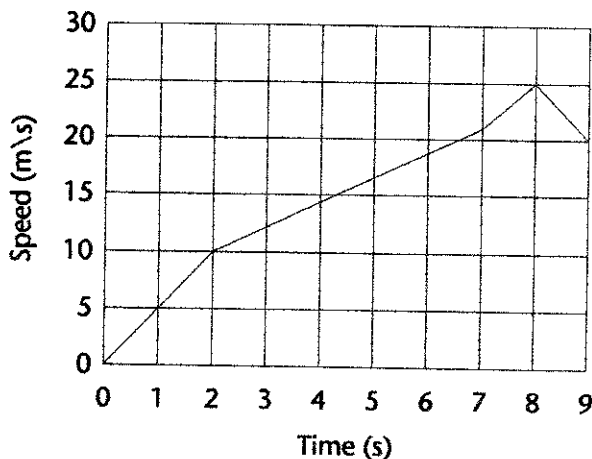
Total distance (m)	Total time (s)
0	0
150	10
200	20
200	35



What is the average speed of the car from 0 to 10 s?

3. A car entering a freeway ramp accelerates from 14 m/s to 25 m/s in 10 s. What is the car's average acceleration during this 10 s?

4. Use the graph below to calculate a bicyclist's average acceleration between 2 s and 8 s.



5. What are some reasons for a law requiring all passengers in cars to wear seat belts?

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