Name _____ Class_____Date_____

Skills Worksheet

Chapter Review

USING KEY TERMS

Complete each of the following sentences by choosing the correct term from the word bank.

mass	gravity	friction	weight
speed	velocity	net force	newton

1. _____ opposes motion between surfaces that are touching.
2. The _____ is the unit of force.
3. _____ is determined by combining forces.
4. Acceleration is the rate at which _____ changes.
5. _____ is a measure of the gravitational force on an object.

UNDERSTANDING KEY IDEAS

Multiple Choice

_____ 6. If a student rides her bicycle on a straight road and does not speed up or slow down, she is traveling with a
   a. constant acceleration.
   b. constant velocity.
   c. positive acceleration.
   d. negative acceleration.

_____ 7. A force
   a. is expressed in newtons.
   b. can cause an object to speed up, slow down, or change direction.
   c. is a push or a pull.
   d. All of the above

_____ 8. If you are in a spacecraft that has been launched into space, your weight would
   a. increase because gravitational force is increasing.
   b. increase because gravitational force is decreasing.
   c. decrease because gravitational force is decreasing.
   d. decrease because gravitational force is increasing.

_____ 9. The gravitational force between 1 kg of lead and Earth is _____ the gravitational force between 1 kg of marshmallows and Earth.

a. greater than
b. less than
c. the same as
d. None of the above

_____ 10. Which of the following is a measurement of velocity?

a. 16 m east
b. 25 m/s^2
c. 55 m/h south
d. 60 km/h

Short Answer

11. Describe the relationship between motion and a reference point.

_____

_____

_____

12. How is it possible to be accelerating and traveling at a constant speed?

_____

_____

_____

13. Explain the difference between mass and weight.

_____

_____

_____

Math Skills

14. A kangaroo hops 60 m to the east in 5 s. Use this information to answer the following questions. Show your work below.

a. What is the kangaroo's average speed?

_____

b. What is the kangaroo's average velocity?

_____

c. The kangaroo stops at a lake for a drink of water and then starts hopping again to the south. Each second, the kangaroo's velocity increases 2.5 m/s. What is the kangaroo's acceleration after 5 s?

_____

CRITICAL THINKING

15. **Concept Mapping** Use the following terms to create a concept map: *speed, acceleration, force, velocity*, *direction,* and *motion*.

16. **Applying Concepts** Your family is moving, and you are asked to help move some boxes. One box is so heavy that you must push it across the room rather than lift it. What are some ways you could reduce friction to make moving the box easier?

_____

_____

_____

17. **Analyzing Ideas** Considering the scientific meaning of the word *acceleration*, how could using the term *accelerator* when talking about a car's gas pedal lead to confusion?

_____

_____

_____

18. **Identifying Relationships** Explain why it is important for airplane pilots to know wind velocity and not just wind speed during a flight.

_____

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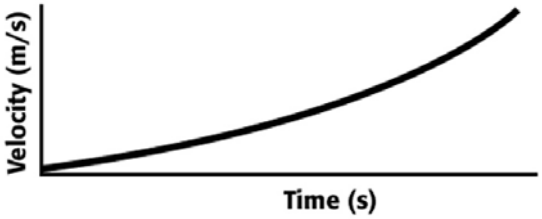
INTERPRETING GRAPHICS

Use the figures below to answer the questions that follow.

19. Is the graph below showing positive acceleration or negative acceleration? How can you tell?

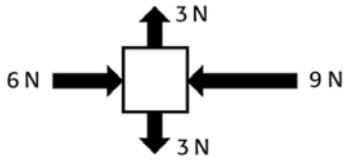


_____

_____

20. You know how to combine two forces that act in one or two directions. The same method can be used to combine several forces acting in several directions. Look at the diagrams, and calculate the net force in each diagram. Predict the direction each object will move.

a.



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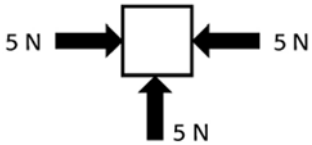
b.



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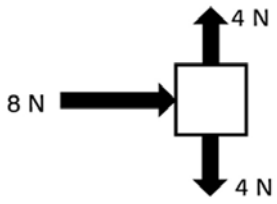
c.



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