

**Force and Motion Study Guide**

Name: \_\_\_\_\_

1. What is motion? What do we use to help us determine if an object is in motion?
2. Write the formula for speed. Calculate the speed of an object that has traveled 42 meters in 12 seconds.
3. What is velocity?
4. What is a force? What unit do we use to measure force?
5. How does each type of force affect the motion of an object?
  - a. Balanced forces:
  - b. Unbalanced forces:
6. What is friction? Name one thing you can do to reduce friction and one thing you can do to increase friction.
7. When looking at a graph of motion, what does the slope of the line tell us?
8. What is acceleration? What unit do we use to measure acceleration? What are the three ways that acceleration can happen?
9. What is gravity?
10. What does Newton's 3<sup>rd</sup> law of motion mean?
11. \_\_\_\_\_ forces maintain motion at constant velocity.
12. \_\_\_\_\_ forces acting on an object produce accelerated motion.
13. \_\_\_\_\_ is the tendency of an object to resist change in its motion.
14. To increase acceleration, one could decrease \_\_\_\_\_.
15. A push or a pull, are both known as \_\_\_\_\_.
16. \_\_\_\_\_ is the force that one surface exerts on another when the two rub against each other. It also depends upon the types of surfaces involved, and how hard the two push together.
17. The forces of gravity increases as the \_\_\_\_\_ of objects increase.
18. What are action and reaction pairs?
19. What is Net force? How we do draw an object with 50N of force pushing from the right and 20N of force pushing from the left?

**Force and Motion Study Guide**

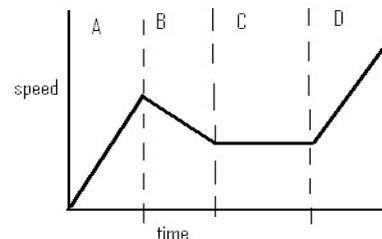
Name: \_\_\_\_\_

Use the graph below to answer the following questions:

20. Name the two variables plotted in the graph. \_\_\_\_\_
21. Describe the object's motion. \_\_\_\_\_
22. What is the distance traveled in three hours? \_\_\_\_\_
23. What is the average speed the object traveled during the entire four hours? \_\_\_\_\_

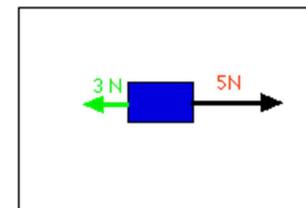


24. Label Positive, Negative, and constant acceleration on the graph below.



- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_

25. In what direction is the net force acting on the box?



26. What does the head of the arrow indicate?
27. In what direction must a force be applied to balance the forces?
28. If you apply a third force in a downward direction, how will the acceleration change?

29. How are balanced and unbalanced forces effected by the following:

- Friction
- Gravity
- Magnets