Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_

**SCIENCE QUIZ – MOTION & FORCE (Ch 13, s1-2)**

**I. Matching** *Match each term with its correct definition, description, or formula.*

|  |  |
| --- | --- |
| \_\_\_\_ 1. How far you are from where you started, including the direction.  \_\_\_\_ 2. Displacement divided by time  \_\_\_\_ 3. Any change in speed or direction  \_\_\_\_ 4. A push or pull that one object exerts on another  \_\_\_\_ 5. How far someone or something has moved or traveled.  \_\_\_\_ 6. The combination of all the forces acting on an object.  \_\_\_\_ 7. Distance divided by time  \_\_\_\_8. A contact force that resists the sliding motion of two surfaces and slows them down | 1. Distance 2. Displacement 3. Speed 4. Velocity 5. Acceleration 6. Force 7. Net Force 8. Friction |

**II. Multiple Choice** Circle the best answer to complete each statement.

9. If you travel from your science classroom to the main office at BLMS, and you stop to visit the gym, the cafeteria, and the library on the way, your distance traveled is **[greater than, less than, equal to]** your displacement.

10. When the net forces acting on an object are **[balanced, unbalanced, gravitational]**, the object’s motion will change.

11. A crumpled piece of paper falls to the ground faster than a flat piece of paper because of **[velocity, friction, air resistance].**

12. While a ball is falling through the air, the force of air resistance on the ball is **[greater than, less than, equal to**] the force of gravity.

13. If you go for a walk around your neighborhood and you end your walk at the same place you began, your displacement is **[greater than, less than, equal to]** your distance traveled.

14. A ball rolling across flat ground will eventually come to a stop because of **[air resistance, friction, buoyant force].**

15. Acceleration can be **[speeding up, slowing down, turning, all of these].**

|  |  |
| --- | --- |
| Speed = Distance ÷Time | Velocity = Displacement ÷Time  (must include direction) |
| Distance = Speed x Time | Time = Distance ÷ Speed |

***Read each problem carefully. YOU MUST SHOW YOUR WORK (even if you don’t “need” to write it out) and make sure to LABEL your answer!***

16. On a recent road trip, Justin drove his car at an average speed of 68 miles per hour (mph). If he drove at this speed for 3 hours, how far did he travel?

17. Rachel took her dog for a walk. She left her house and walked 1 block south, turned and walked 1 block west, turned again and walked 1 block north. Finally, she walked 1 block east and ended her walk back at her house. What is Rachel’s total displacement?

18. Adam runs a distance of 400 meters in 2 minutes. What is his average speed?

19. Carlos is a long-distance bicycle rider. He leaves his house on Highway 51 and rides north. He stops after 3 hours and determines that he has traveled 45 miles north of his house. What is Carlos’ velocity?

20. A car set on “cruise control” maintains a constant speed, staying at whatever speed the driver set it for. If a car using cruise control is driving on a completely straight section of road, is the car accelerating? Explain WHY or WHY NOT.