

Name: _____

Class Period: _____

Physics: Kinematics in One-Dimension
Understanding Velocity and Acceleration - Homework

Instructions:

Below is a chart with velocity and acceleration. A + indicates a positive velocity or acceleration, a - indicates a negative velocity or acceleration. A 0 indicates a velocity or acceleration of zero. In the column labeled Motion, describe *in words* the resulting motion.

| Velocity | Acceleration | Motion |
|----------|--------------|--------|
| + | 0 | |
| - | 0 | |
| + | + | |
| + | - | |
| - | + | |
| - | - | |
| 0 | 0 | |

Please see back for additional practice

Additional Practice:

Answers may be written on this page, but all work MUST be shown

1. You manage to travel 230 km in 3.25 h. What is your average velocity...
 - A. ...in km/h
 - B. ...in m/s

2. Does a speedometer on a car measure velocity, speed, or both?

3. A car is moving to the right along a country road. The driver hits the brakes that apply an average acceleration $a = -2.0 \text{ m/s}^2$. If the initial velocity of the car was 15.0 m/s , how long will it take for the car to slow to a stop?

4. A poor, absent-minded physicist has lost his keys. He walks 6 blocks east searching for them. He stops for 2 minutes to think, walks back 3 blocks west towards his starting point, then has an idea, turns around again, and walks 4 blocks east.
 - A. Draw a sketch depicting the physicist's movements.
 - B. What is this physicist's **displacement**?
 - C. What is this physicist's **distance** traveled?