

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

Date: \_\_\_\_\_

Period: \_\_\_\_\_

### Important Formulas in Physics & Astronomy

Velocity: Speed with direction = distance  $\div$  time

Acceleration: Change in velocity = velocity  $\div$  time or distance  $\div$  time  $\div$  time or distance  $\div$  time<sup>2</sup>

Momentum: mass x velocity

Force = mass X acceleration

### Math Practice

1. A car travels from Hartford to Windsor Locks (12 miles) in 20 minutes. What is its velocity?
2. A 1500kg car traveling at 30meters per second has a momentum of ?
3. Mr. Condon owns a 55 kilogram Bernese Mountain dog named Titan. He can run the length of his driveway (160m) in 15 seconds. What is her momentum?
4. A full size pickup with a momentum of 50,000 kgm/s transfers 100% of that momentum to a 1000 kg car during an accident. How fast will the car be moving after the collision?