

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

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

**Physics: Unit Conversions and Kinematics Homework**

*(Work needs to be shown for the problems below)*

**Unit Conversions**

1. A car is traveling at 95 miles per hour (mph). How fast is this car moving in:
  - A. Meters per second (m/s)?
  - B. Kilometers per hour (km/h)?
  
2. A football field is approximately 109 meters long. How long is the field in:
  - A. Centimeters (cm)
  - B. Miles

**Kinematic Equations:**

3. A racecar traveling at an initial velocity of 44.0 m/s undergoes a uniform acceleration giving it a velocity of 22.0 m/s in the time of 11.0 s. What is the value of this acceleration?
  
4. A plane beginning from rest must reach a velocity of 88.3 m/s to take off. The plane uses 1365 m of room on the runway to reach that velocity. How much time does the plane need before it can take off?
  
5. A driver brings a car initially travelling at 23.0 m/s to a complete stop in a time of 2.00 s.
  - A. What is the car's acceleration? (Assume it undergoes a constant acceleration)
  - B. How far does the car travel before coming to a stop?