

DAY 3

Homework Assignment (see syllabus for homework collection information)

1. The speed limit on an interstate is 65 mph. Determine this speed in m/s and ft/s.
2. A force of 1 N acts on a mass of 1 kg for a time of 1 s. What is the acceleration of the mass? What speed does the mass reach? How far does the mass move?
3. State your weight in lbs. and N. State your mass in kg.
4. A 3300 lb car can accelerate 0 - 60 mph in 10 seconds. Create an FBD of the car. Calculate the net force on the car in N and lbs.
5. In the previous problem, determine how far the car moves in those 10 seconds (in m and ft).
6. **PHY 231 Only**
An object at rest begins moving. After 1 second the object has moved 2 ft. After 2 seconds the object has moved 8 ft. After 4 seconds the object has moved 32 ft. Make a graph of distance in ft. vs. time in seconds. Use derivatives to determine the acceleration of the object and show that the acceleration is constant.