Problems

Name _____

ON A SEPARATE SHEET OF PAPER, solve the following force and gravity problems using Newton's Law's and Newton's Law of Gravitation. It is possible that you might need to use our kinematic equation models to find acceleration.

- 1. Find the acceleration due to a 300 N force acting on an object with a mass of 3000 *kg*.
- (*a*) What is the weight of a 5.0 *kg* backpack?
 (*b*) What is the acceleration of the backpack if a net force of 10 N is applied?
- 3. What net force is required to accelerate a 20 kg object at 10 m/s^2 ?
- 4. What forward force must the ground apply to the foot of a 60 kg person to result in an acceleration of 1.0 m/s^2 ?
- 5. A 1,000 *kg* car accelerates uniformly (*i.e. at a constant rate*) to double its speed from 36 *km/h* in 5 *sec*. What net force acted on this car?
- 6. A net force of 3000 N accelerates a car from rest to 36 km/h in 5 sec.
 - (a) What is the mass of the car?
 - (*b*) What is the weight of the car?
- 7. How much does a 60 *kg* person weigh in Newton's and in pounds?