Acceleration Homework 3

Name: _____

Hour: _____ Date: _____

Problem	x vs. t Graph	v vs. t Graph	Solution (Show Your Work)
1. A poorly tuned SMART Car can accelerate from rest to a speed of 28 m/s in 20 seconds. a) What is the acceleration of the car? b) What is the displacement of the car in this time?			
2. At t = 0 seconds, a car has a speed of 30 m/s. After 6 seconds its speed is 15 m/s. a) What is the acceleration of the car during this time interval? b) What is the displacement of the car during this time?			
3. A bear spies some honey and takes off from rest accelerating at 2 m/s/s. a) If the honey is 16 m away, how fast will his snout be moving at the moment of ecstasy? b) How long did it take him to get there?			
4. A bus moving at 20 m/s (t = 0) slows at a rate of 4 m/s for each second. a) How long does it take to stop the bus? b) How far does it travel while braking?			

5. A car whose initial velocity is 30 m/s slows to a stop in 5 s. a) What is the acceleration of the car? b) What is the displacement of the car after 3 seconds? c) What is the displacement of the car after 5 seconds?		
6. A dog runs down the driveway with an initial speed of 5 m/s and increases his speed to 10 m/s in 5 s. a) What was his acceleration during this time? b) How far has the dog run?		
7. From rest a physics student skis down a slope accelerating at a constant 2.0 m/s/s. a) How far has she skied after 15 seconds? b) How fast is she going after 15 seconds?		
8. A mountain goat starts a rockslide. The freed rocks crash 100 m down the slope. a) If the rocks reach the bottom in 5 seconds what is their acceleration? b) How fast are they going when they hit?		