Linear Motion problem set

1. An object is moving on a straight line.The average velocity on the first half displacement is 5 m/s. The average velocity on the second half displacement is 3m/s, what is the total average velocity ?
2. A block is accelerating on a straight line. It go through 30 m for it to accelerate form 5 m/s to 10 m/s. For how many meters does it need to accelerate form 10m/s to 15m/s?
3. A car is decelerating from 10 m/s. I after 2 s the displacement is 6.25m, what is the displacement after 5s?
4. A car is accelerating on a road, and it has pass through point A,B and C in order. AB = BC = s, the car use t1 to go through AB and t2 to go through BC. Try to find the acceleration in terms of s, t1 and t2.
5. An object falls from free. After 1s it pass through the half point. What is the total length?
6. Object A is throwing up with a initial velocity of 30m/s. After 2s another object B is throwing up with the same velocity. What’s the velocity of object A when it meets object B?
7. Two small ball is connecting with a light rope. A student release it from the 3rd floor and find that the time difference between the two balls hit the ground is t1. When he do the same thing on the 4th floor, he find out it is t2. Find out which one is bigger?

8. A people is running on a road and he is accelerating. He pass through 3 points:A,B and C. AB = AC . His average velocity in AB is 3m/s and in BC is 6m/s. Find out his speed at point B.