More Constant Acceleration Problems

1. A happy physics student is leaving school for the day. This student uniformly accelerates her car from rest with an acceleration of 1.2 m/s^2.
   a. How long does it take her to reach 15 m/s?

   b. How far does she travel in this time?

2. A car is uniformly accelerated at the rate of 2.5 m/s^2 for 12 s.
   a. If the original speed of the car is 8 m/s, what is its final speed?

   b. How far does the car travel in this time?

3. A race car decreases speed uniformly from 55 m/s to 44 m/s in 11 seconds.
   a. What is the acceleration of the car?

   b. How far does the car travel during this time?

4. Mary is riding her bike with a speed of 14 m/s, when she constantly decelerates and comes to rest in 7 seconds.
   a. What is Mary's acceleration?

   b. How far does Mary travel while decelerating?

5. A ball rolling down an incline for 0.75 s undergoes a uniform acceleration of 4.2 m/s^2. The ball has an initial speed of 2.2 m/s when it starts down the incline.
   a. How long is the incline?

   b. How fast is the ball moving at the bottom of the incline?

6. A car traveling west at 44 m/s is uniformly decelerated to a speed of 22 m/s over an 11 second period. What distance does the car travel over this time?

Answers: 1. a. 12.5 s b. 93.8 m 2. a. 38 m/s b. 276 m 3. a. – 1 m/s^2 b. 545 m
4. a. -2 m/s^2 b. 49 m 5. a. 2..83 m b. 5.35 m/s 6. 363 m