PHYS 101 Problems with Kinematic Equations Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. A car traveling with an initial velocity of 14 m/s accelerates at a constant rate of 2.5 m/s2 for a time of 3 seconds.  
a. What is its velocity at the end of this time?  
b. What distance does the car travel during this process?

2. A runner accelerates to a velocity of 5.36 m/s due west in 3.00 s. His average acceleration is 0.640 m/s2, also directed due west. What was his velocity when he began accelerating?

3. A jetliner, traveling northward, is landing with a speed of 69 m/s. Once the jet touches down, it has 750 m of runway in which to reduce its speed to 6.0 m/s.   
a. How much time it took to land the jet?   
b. What is the average acceleration of the jet during landing?

4. An electric vehicle starts from rest and reaches a speed of 8 m/s while travelling a distance of 16 m. What is the average acceleration of the electric vehicle?