Physics 112: Acceleration Quiz Review

1. A person is standing at a window 142 m above the ground. Leaning outside she throws her Blackberry® upwards with a velocity of 33 m/s.
    a. Calculate the maximum height above the ground of the obsolete Blackberry®. ($\vec{d}_f$ = 198m)
    b. Calculate the length of time for the phone to be traveling downward with a speed of 55 m/s. (t=8.97s)
    c. Calculate the velocity of the Blackberry® when it is 25 m above the ground. ($\vec{Vf}$= -58.2m/s [up])

2. A fighter jet initially flying 175 m/s [E] accelerations to 315 m/s [W] and the acceleration was 15 m/s^2 [W]. Calculate the total distance traveled by the plane in that time. (d$_{total}$= 4392m)

3. A car is travelling 120km/h [E] and accelerates at a rate of -5.6m/s^2. Calculate the time that it will take for the car to slow to 90km/h [E]. (t=5.4s)

4. Standing on the ground a person throws a quarter into the air. It leaves his hand with an upward velocity of 25m/s.
    a. Calculate the length of time the quarter will be traveling upwards. (t=2.5s)
    b. Calculate the quarter's maximum height. ($\vec{d}_f$ = 31.8m)

5. Sonic (you know, the Hedgehog) rolls up a slope at 9.4 m/s. After 3.0 s he is rolling back down at 7.4 m/s. How far up the hill is he at this time? ($\vec{d}_f$ = 3m)

6. A kangaroo is capable of jumping to a height of 2.62m. Determine the takeoff speed of the kangaroo. ($\vec{v_o}$ =7.2m/s [up])

7. It was once recorded that a Jaguar left skid marks that were 290m in length. Assuming that the Jaguar skidded to a stop with a constant acceleration of -3.90m/s^2 [E], determine the speed of the Jaguar before it began to skid. ($\vec{v_o}$= 47.5m/s [E])

8. A car changes its velocity from 85km/h [E] to 110km/h [W] in 45s. Determine the total distance travelled by the car. (d$_{total}$ = 2231m)