Chase Problems

A police car is stopped at a red light. As the light turns green, a diesel truck hurtles past in the next lane traveling at a constant speed of 28 m/sec. If the police car, siren blaring and lights flashing, accelerates at 4 m/sec², how many seconds will it take to catch the truck? How far does the chase extend? How fast is the cop going?

A police car notices a speeder on the highway at 40m/s. When the speeder is 50m down the road, the police officer accelerates from rest at 1.2m/s2. How long until it catches the speeder? How far does the cop travel? How fast is the police officer going?

A cheetah stalks a giraffe at 1.2m/s. The giraffe strolls at an initial speed of 0.92m/s. When the cheetah is 100m away, the giraffe smells her and starts to accelerate at 1.1m/s2. The cheetah accelerates at 3.7m/s2. How long until the cheetah catches the giraffe? How far does the chase extend? How fast is the cheetah going? How fast is the giraffe going?