Acceleration Problems I

Physical Science and Technology

1. Ms. Stroud is running down the street at 7.5 meters per second. She sees a double-tall latte on the road ahead of her and starts sprinting. After 3 seconds have passed, Ms. Stroud is running at 9.1 meters per second. Assuming she does not change direction, what was Ms. Stroud's acceleration?

2. Blake Para's older brother Alex is falling off a cliff. At the beginning of his fall, he is motionless - his velocity is 0 meters per second. After 10 seconds, his velocity is 283 meters per second. What was Alex's acceleration? (Alex was uninjured when he hit the ground because he landed on Mr. Bregar).

3. Dakota Gange is riding her bike across a parking lot. She is heading east at 19.2 meters per second. She runs over Mr. Bregar, who is lying down in the parking lot. Five seconds after running over Mr. Bregar, Dakota is heading east at 14.8 meters per second. What was Dakota's acceleration?

4. Mr. Kirsch throws a pumpkin onto Mr. Bregar's car. At first, Mr. Kirsch is holding the pumpkin motionless – its velocity is 0 meters per second. 1.3 seconds after Mr. Kirsch lets go, the pumpkin is traveling at 329.8 meters per second. Assuming it does not change direction, what was the acceleration of the pumpkin?

5. A go-cart is rolling down a straight track at 6.5 miles per hour. The go-cart's speed does not change. Is the go-cart accelerating? WHY???????????? P.S. Mr. Bregar is being dragged behind the cart.