Acceleration math part 1. Drawings, drawings and more drawings!

1. A cheetah is running at 4 in the positive direction. The cheetah then speeds up to run at 12 in the positive direction. What is the cheetah’s ∆V?
2. A ball is rolling at 6 in the negative direction. It slows to 2 in the negative direction. What it the ball’s ∆V?
3. A person is travelling at 5 towards the west. He turns around and starts moving at 3 towards the east. What is the person’s ∆V?
4. A bowling ball is travelling south along a channel at 1.5 . It hits a pair of spinning wheels at t=2 s that accelerates it to 3.0 south by t=4s. What is the bowling ball’s acceleration?
5. A tennis ball falling downwards passes the top of a window 5 s after a stopwatch is started. If it has a velocity of 3.6 downward as it crosses the window top, what is its velocity when the stopwatch reads 8 s?
6. A .357 magnum is fired west at a test range. It passes a radar device 1 second after it has been fired that measures the velocity to be 410 [W]. If the bullet is subjected to a uniform **deceleration** of 20 , what is its velocity when the timing device reads 8 s?
7. A car is travelling west at 20 [W] at 11:45 am. At 11:47 am, the car is travelling at 45 [E]. What is the cars acceleration?