Question 1:

Answer the following True/False questions (**Assume [East] is positive**)

1. An object under uniform motion has a
   (a) Non-zero average acceleration in the positive direction (T / F)
   (b) Zero average acceleration (T / F)
2. De-acceleration is just acceleration in the same direction of motion (T / F)
3. Suppose a Velocity V. Time plot is represented by $y = 2x + 4$,
   (a) The average acceleration is uniform (T / F)
   (b) The initial velocity of the body at $t = 0$ was $\vec{v}_i = +4\,\mathrm{m/s}$ (T / F)
   (c) The displacement over the time interval $[0, 2]$ was $\Delta\vec{d} = +12\mathrm{m}$ (T / F)
   (d) The average acceleration is $\vec{a}_{av} = +2\,\mathrm{m/s^2}$ (T / F)
4. A secant line on a Velocity V. Time graph over the interval $[t_1, t_2]$ gives me the instantaneous acceleration over the time interval $[t_1, t_2]$. (T / F)
5. Suppose a Position V. Time plot is represented by $y = x^2 + 4$. Then,
   (a) Slowing down in the positive direction. (T / F)
   (b) The object is experiencing uniform motion. (T / F)
   (c) The object <u>may</u> be experiencing uniform acceleration (T / F).
   (d) The initial position vector of the object at $t = 0$ is $\vec{d}_i = 2\,\mathrm{m}$
6. Suppose a Velocity V. Time plot is represented by $y = -x + 3$, then the displacement over the time interval $[0, 8]$ is $\Delta\vec{d} = +0\,\mathrm{m}$. (T / F)