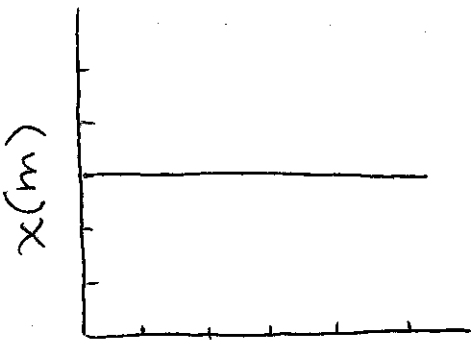
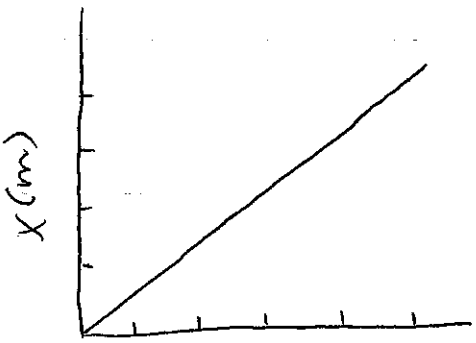
Investigation 5 – Acceleration
Notes

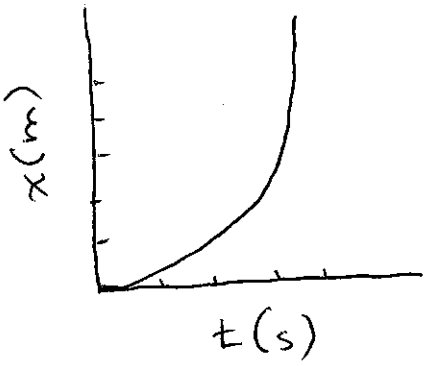
- Recall velocity (v) = change in position per unit of time
  $v = \Delta x / \Delta t$
- Acceleration (a) = change of velocity per unit time
  $a = \Delta v / \Delta t$
- If there is constant velocity (i.e., no change in velocity), there is no acceleration
- Acceleration is measured in units of displacement per unit of time per unit of time, for example, meters per second per second (m/s/s), or m/s^2
- Objects rolling down slopes accelerate; acceleration is greater on steeper slopes
- Acceleration can be positive (speeding up) or negative (slowing down)
- Examples of various position graphs:



= no movement =



= constant velocity =



= acceleration =

- Note the difference between a constant velocity of 10m/s and a constant acceleration of $10m/s^2$
    - Constant velocity of 10m/s, the velocity is always 10m/s, never faster, never slower
    - Constant acceleration of $10m/s^2$, the velocity is changing, getting faster or slower each second by 10m/s