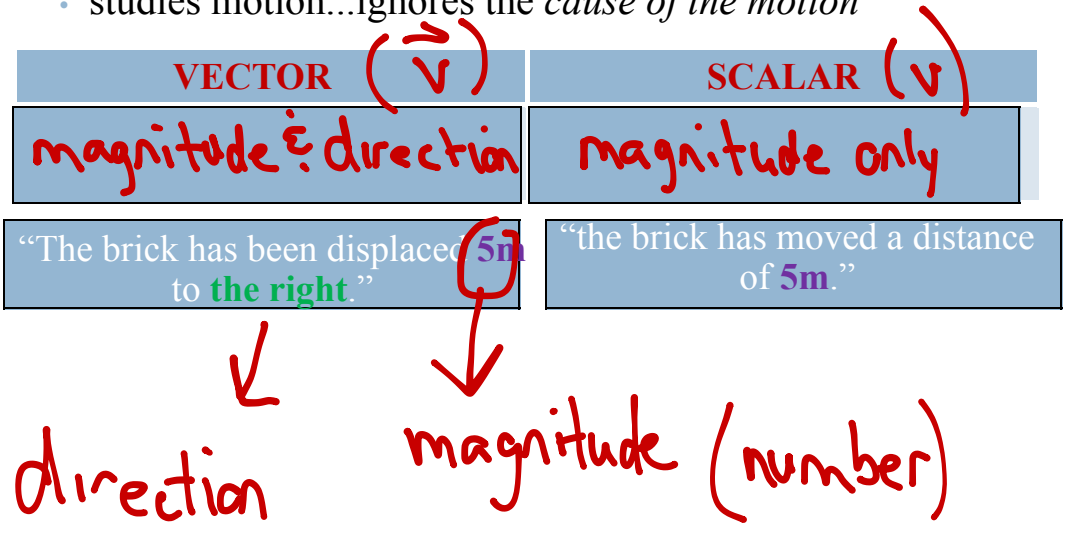
UNIT #1 KINEMATICS

Distance, Position, and Displacement

Kinematics

- the study of motion
  - studies motion...ignores the *cause of the motion*



Motion

- A change in an object's location as measured by a particular observer

- Direction
  - The line an object moves along from a particular starting point

Distance

- **distance–the total path length travelled by an object**
  - (m)
  - SCALAR
- example: If you walk

  2m from your locker to your biology class

  2m from biology class to the washroom

  7m from the washroom to your physics class

  11m
- You have travelled a **distance** of 11m.

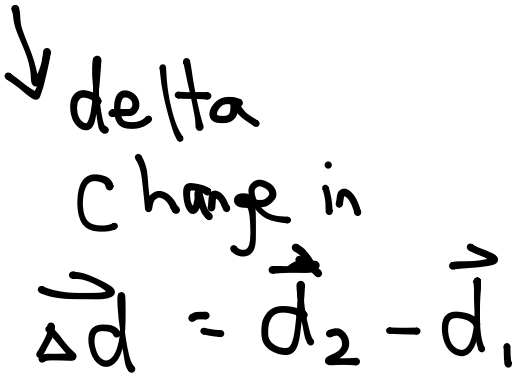
Position

- **position–the distance and direction of an object from a reference point.**
  - VECTOR
  - $\vec{d}$

- example : the brick is 5m to the right of it's starting point.

Displacement

- **displacement**-the change in position of an object
  - VECTOR
  - $\vec{\Delta d}$



Summary

d - distance

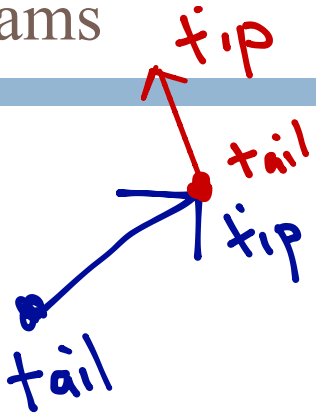
$\vec{d}$ - position

$\Delta\vec{d}$ - displacement

Vector Scale Diagrams

- Add vectors “tail-to-tip”

- example:
  - choose scale
  - calculate new vectors
  - choose directions
  - draw scale diagram
  - draw and measure resultant vector



Homework

- Read pgs. 6-20
- p.13 #1-4, 5ac