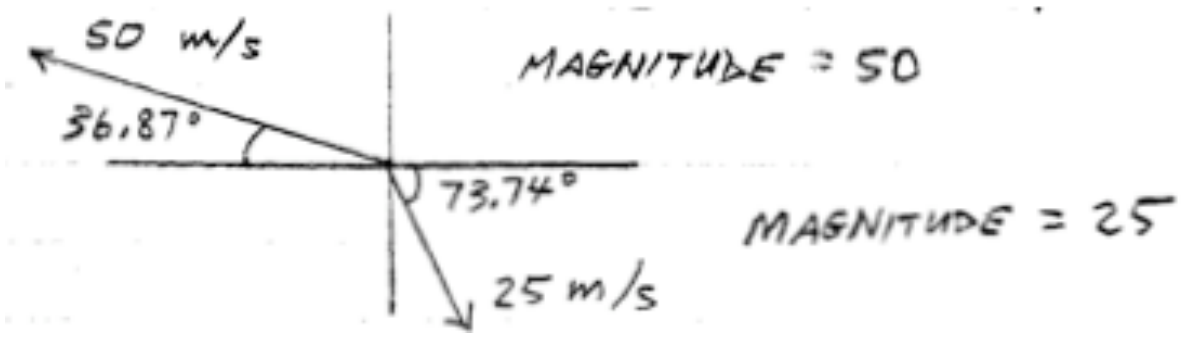
Trig Review

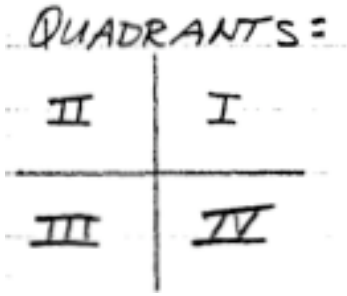
Vectors

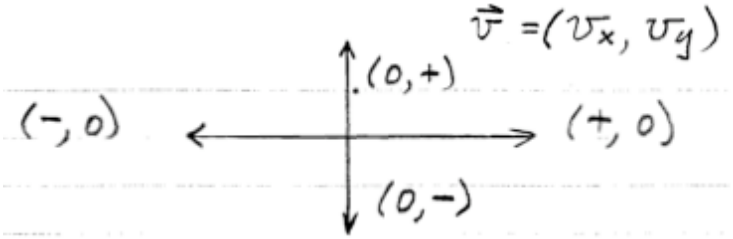
- Definitions:
  - Magnitude = the number, always (+)
  - Units = S.I. Metric label
  - Direction = the angle to the nearest x-axis, always between 0 and 90^0
- Example:



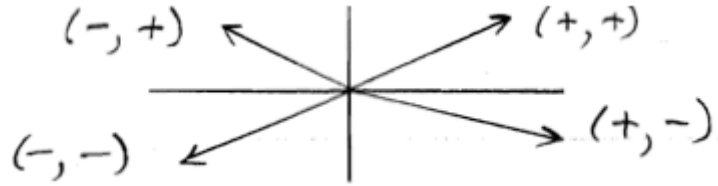
Signs

- As usual with cartesian coordinate system.
  - X-axis: Pointing right (+), left (-)
  - Y-axis: Up (+), down (-)
- Key point:
  - A pure vector goes along one of the axes.
  - A mixed vector goes at an angle into one of the quadrants
- Pure vectors: one of the components will be zero.



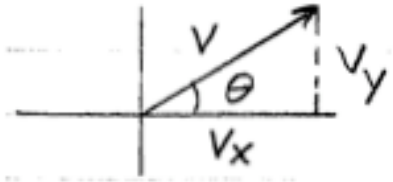


- Mixed vectors: will have both x and y motion



Resolving vectors into components: Finding x and y parts

- In general,



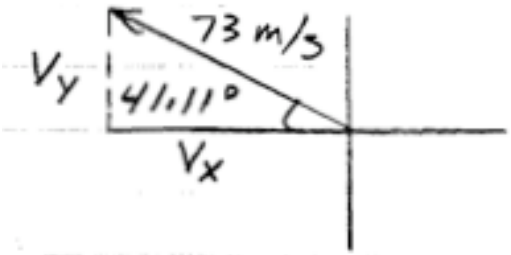
$V_x = V \cos\theta$

$V_y = V \sin\theta$

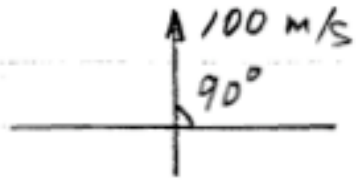
WITH THE PROPER +/− IN FRONT.

- Example: Given

  Find the x and y motions

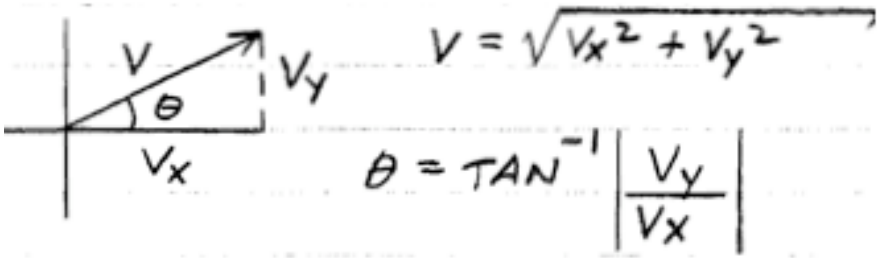


- Example: Given
- Find the x and y motions



Putting components together to make a vector

- In general,



- Note: v, the magnitude of the vector, is always (+).
- V_x can be +/-, V_y can be +/-, to indicate the direction of motion along the separate axes.

- Example: V_x = 12 m/s V_y= - 5 m/s

  Find V and θ