

Vectors: size & direction

ex: vel, accel, forces

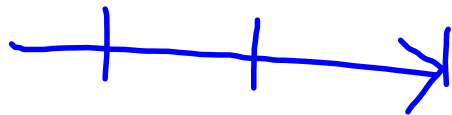
represented by an arrow



- a) - length represents size <sup>scale</sup>
- b) - orientation of head represents direction

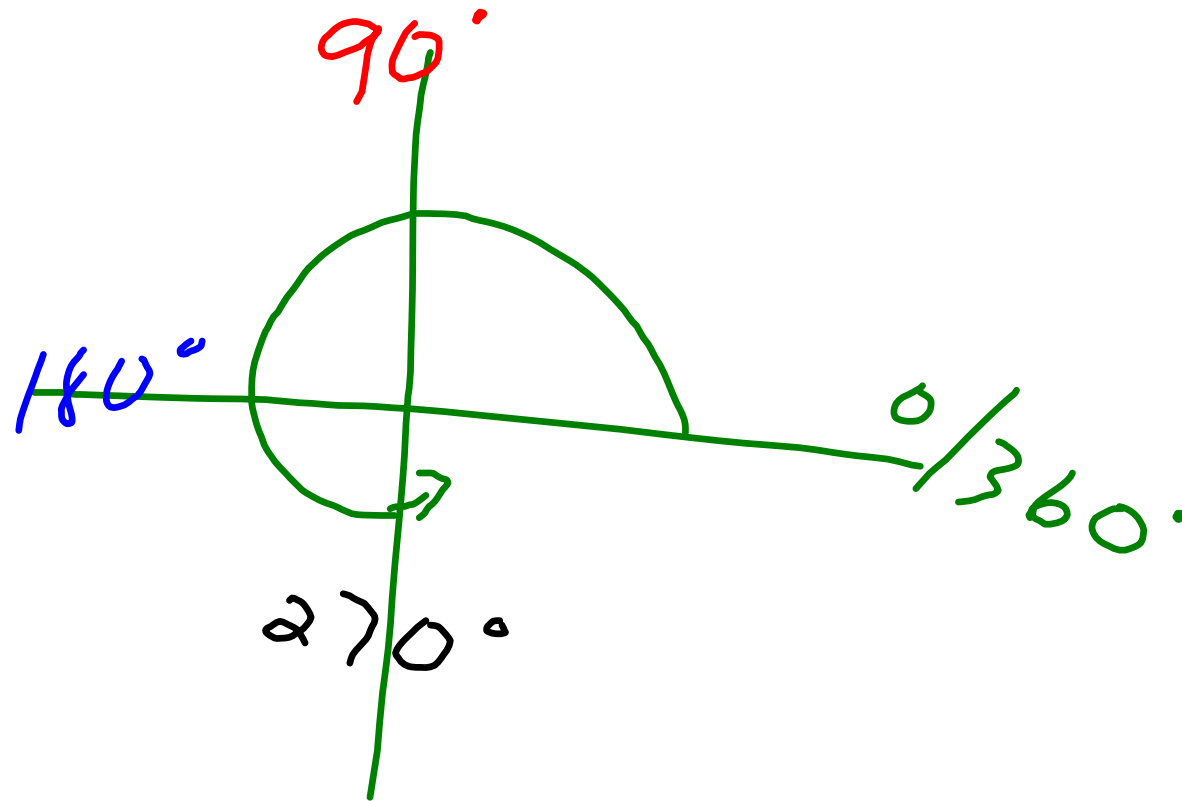
a) scale: 1 cm of length = 1 N of Force

10 cm   20 cm   30 cm



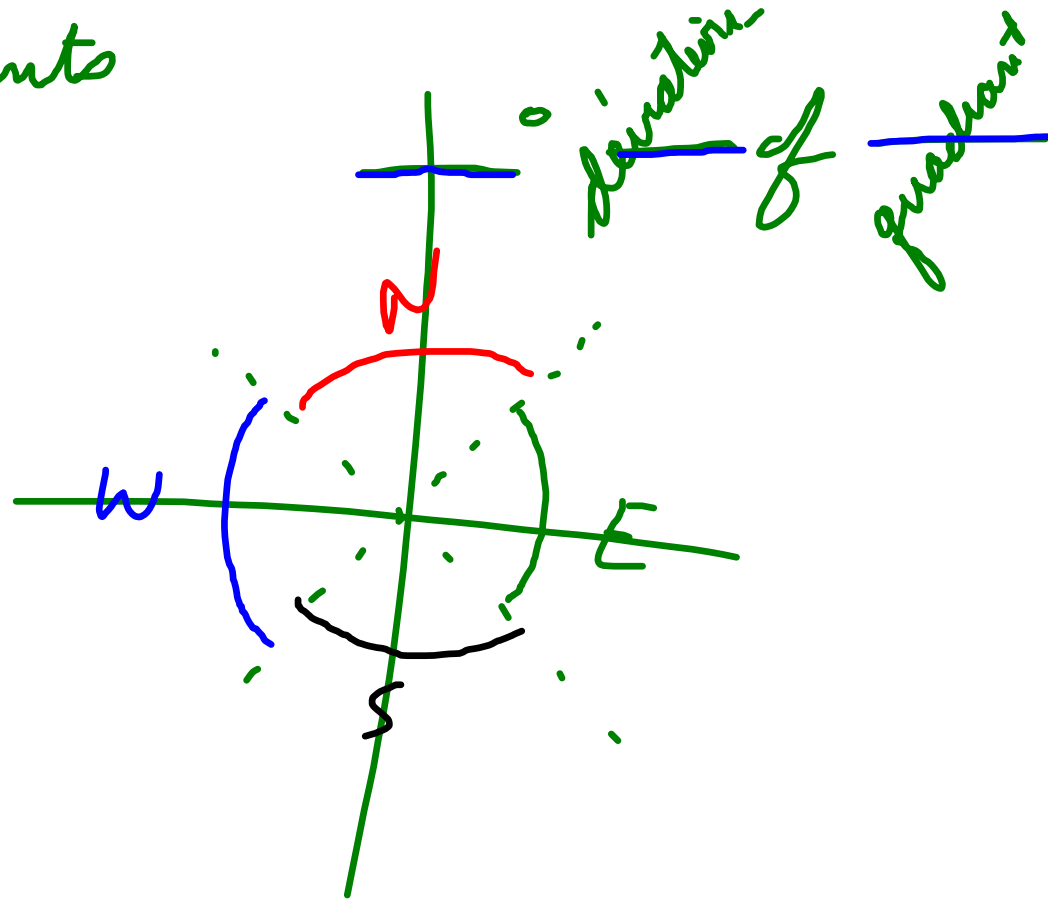
30 cm = 30 N

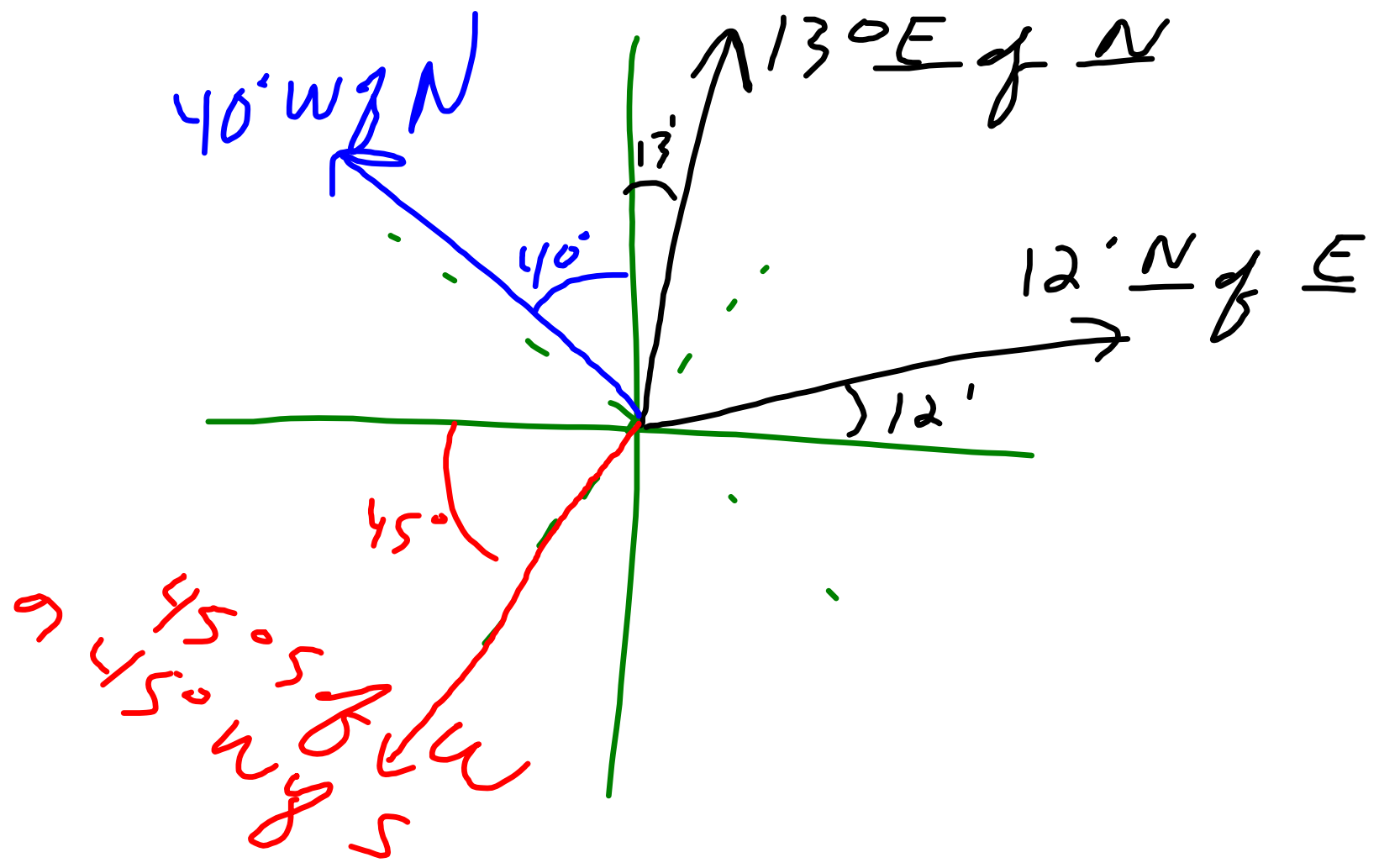
2) direction



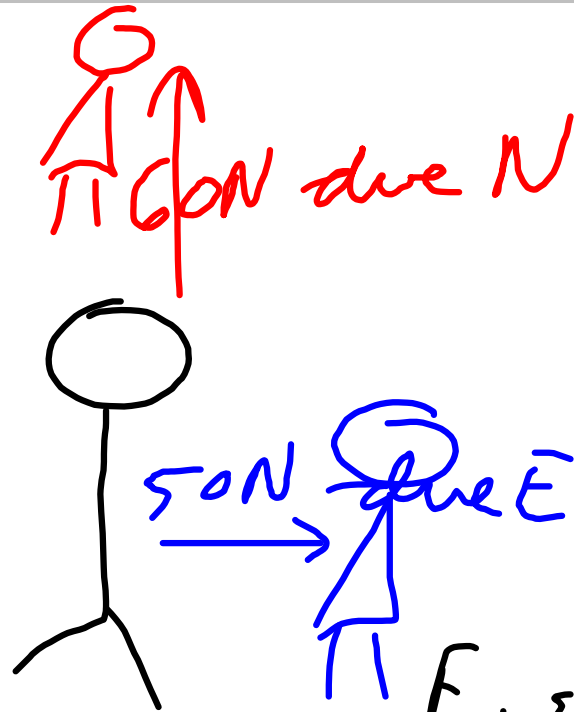


quadrants





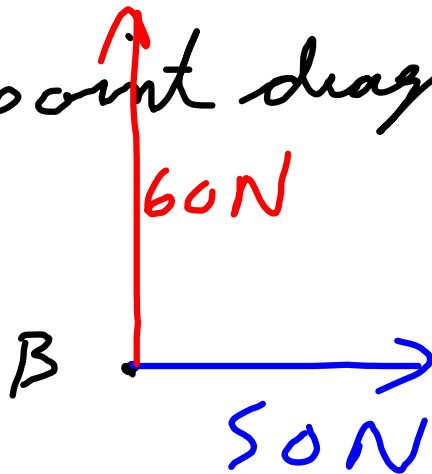
① picture



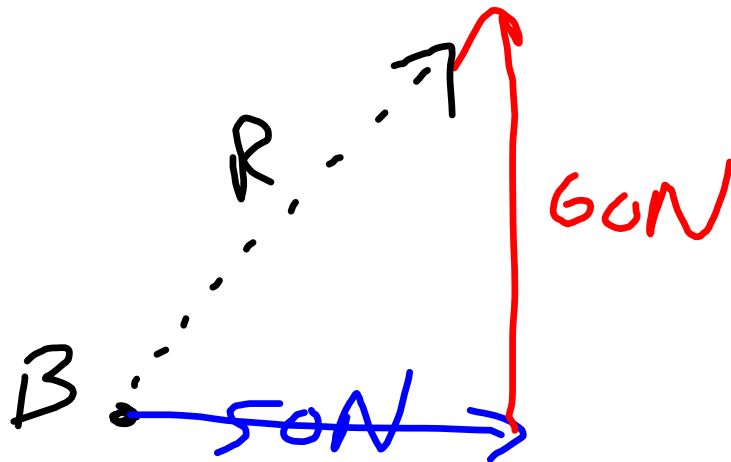
②  $F_1 = 50\text{N}$   $0^\circ$   
 $F_2 = 60\text{N}$   $90^\circ$   
 $R = ?$

$F_1$  &  $F_2$  are Components  
 $R =$  Resultant  
(overall effect)

③ point diagram



④ Vector diagram  
uses rules of vector addition



# Rules for Vector Addition

- Draw the first vector (scale and direction)
- Start the second vector at the head of the first and draw it. (repeat if more than two)
- Start the resultant at the tail of the first and end it at the head of the second (last).  
Measure its direction for the tails of the first and resultant.

