

Name: _____

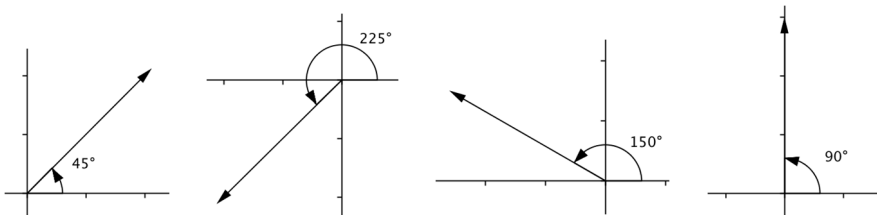
Date: _____

MCHS Honors Physics 2014-2015

Vector Addition 3

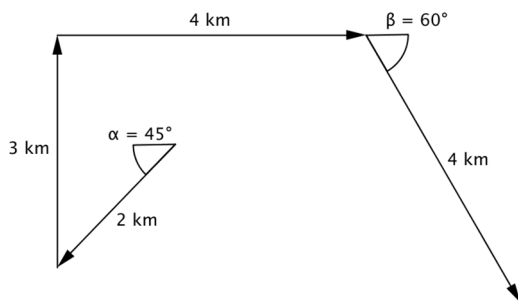
All angles in this assignment are given from the positive x-axis.

- 1) Add the following 4 vectors together mathematically, by making a table of component vectors (x-direction and y-direction with positive and negative values). Determine the magnitude (length) and direction (angle) of the resulting vector.



- a. 30 m/s @ 45°
- b. 22 m/s @ 225°
- c. 100 m/s @ 150°
- d. 45 m/s @ 90°

- 2) Walking in the desert, Collin follows the following vectors to find a drinking fountain. If he had remembered what he learned in Physics class, how far and in what direction could he have walked from the start in order to get to the drinking fountain?



- 3) Jordan got a pass to go to the office, but instead wandered the halls of MCHS. He walked 40 meters at an angle of 30°, followed by 100m at an angle of 330°. Then he headed 200m at an angle of 270° and finally walked 120m at an angle of 15°. How far from Mr. Alderman's classroom (and in what direction) is he?

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- 4) Amber and Paige decide to hide Mrs. Falasco's car keys in the school and then drop a note on her desk detailing how she can find them. The note read:

"If you walk following these instructions, you will find your keys:

- 1) 150@14°
- 2) 300m@34°
- 3) 600m@175°
- 4) 800m@239°
- 5) 1200m@341°"

How far away, and in what direction, are Mrs. Falasco's keys?