

Vector Addition

Vectors



- **To add vectors** graphically, place the tail of the second vector on the tip of the first vector. Draw the resultant from the first tail to the second tip.
- **To subtract vectors**, add the opposite (negative) of the second vector.

A + B

A + C

C - B

0.5C

3B - A

Vector Addition: 3 Methods

1. Experimentally (using a compass)

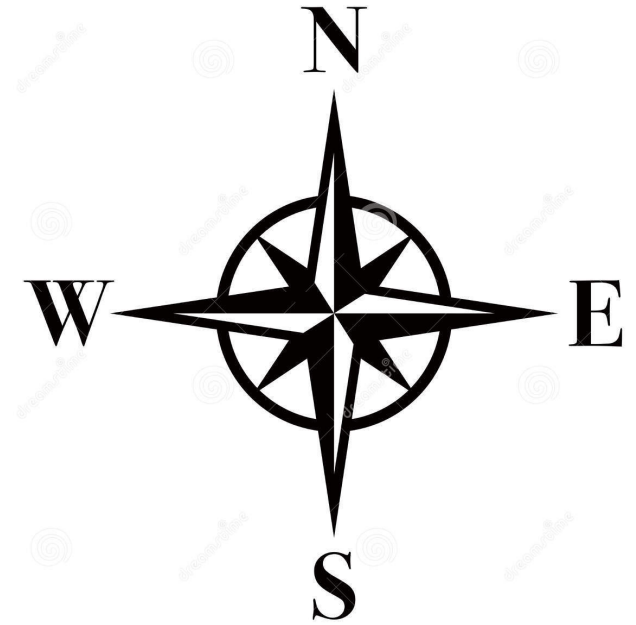
Ex: Directions:

3 paces North

4 paces @ 60° North of East

7 paces South East

2 paces @ 20° North of West



2. Graphically (“Tip to Tail”)

Directions:

3 paces North

5 paces @ 60° North of East

4 paces South East

2 paces @ 20° North of West



3. Component (Mathematical) Method

Directions:

3 paces North

5 paces @ 60° North of East

4 paces South East

2 paces @ 20° North of West

Displacement	X – component (East)	Y – component (North)
	$R_x =$ _____	$R_y =$ _____

$R =$ _____

$\theta =$ _____