

Practice Adding Vectors

- ❖ Complete the following problems in your notes.
- ❖ For each pair of vectors, first add or subtract the vectors graphically using the tip to tail method.
 - Remember to choose an appropriate scale for each problem.
 - If you are subtracting vectors remember that it is the same thing as adding the opposite.
 - Draw the first vector, then draw the second vector. Place the tail of the second vector at the tip of the first vector.
 - Lastly, draw the resultant vector from the tail of the first vector to the tip of the last vector. Measure the magnitude and direction of the resultant vector.
- ❖ Then, confirm your answers by adding or subtracting the vectors analytically.
 - Start by drawing each individual vector and finding the components of each individual vector. (Be careful with positive and negative signs!)
 - Then add components to find the components of the resultant vector.
 - Draw the components of the resultant vector and draw the resultant vector.
 - Lastly, find the magnitude and direction of the resultant vector.

- 1.) 10m due North + 7m due South
- 2.) 15km due East + 20km due West + 55km due East
- 3.) 12km@30° + 8km@120°
- 4.) 85km@25° + 100km@-15°
- 5.) 10cm@45° + 25cm@105° + 50cm@205°
- 6.) 67 cm due East + 30cm due West
- 7.) 65m@90° + 35m@0°
- 8.) 45m@75° S of E + 75m@145°
- 9.) 35cm due North + 85cm due East
- 10.) 30m@200° + 45m@-90° + 15m@30°

Answers:

- 1.) 3m North
- 2.) 50km East
- 3.) 14.4km @ 64°
- 4.) 174km @ 3.3° N of E
- 5.) 49.5cm @ 10° N of W
- 6.) 37cm East
- 7.) 74m @ 64°
- 8.) 99.8m @ 60° S of W
- 9.) 91.9cm @ 22.4° N of E
- 10.) 50.1m @ 72.4 S of W