

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 @ 65° E of N + 100km @15° S of E
- 5.) 10cm @ 45° + 25cm@ 105° + 50cm @ 205°
- 6.) 67 cm due East + 30cm due West
- 7.) 65m @ 90° - 35m @ 180°
- 8.) 45m @ 75° S of E - 75m @ 35° N of E
- 9.) 35cm due North + 85cm due East
- 10.) 30m@200° + 45m@ -90° +15m@30°

Answers:

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|---------------------|-------------------|------------------|------------------|
| 1.) 3m North | 2.) 50km East | 3.) 14.4km @ 64° | 4.) 174km @ 3.3° |
| 5.) 45.9cm @ 167.3° | 6.) 37cm East | 7.) 74m @ 61.7° | 8.) 99.8m @ 240° |
| 9.) 91.9cm @ 22.4° | 10.) 50.1m @252.4 | | |