

## Vectors Worksheet #1

1. Find the resultant when the following vectors are added: 5m [North], 8m [South], 3m [South], and 7m [North].
2. Find the resultant when the following are added: 12.0m [North] and 5.00m [West].
3. Sally leaves home and goes for a hike. She travels: 80m [North], 120m [East], 30m [South], 40m [West], and then 10m [North].
  - a) What is her final displacement from home?
  - b) What direction should she travel to get back home?
4. Subtract the following vectors: 8m [East] – 3m [West]
5. Subtract the following vectors: 4m [East] – 7m [West]
6. Subtract the following vectors: 2.0m [North] – 6.0m [West]
7. Resolve the vector 7.80 m/s [ $54^\circ$  S of W] into its components.
8. Find the resultant for the following two vectors:  
 $5\text{m/s } [30^\circ \text{ N of E}] + 11\text{m/s } [55^\circ \text{ S of W}]$
9. The initial position of an object is 34m [North]. After 12s, it is located at position 56m [West]. What is the object's average velocity?
10. A curious physics student drops a lazy physics student down a deep well and listens for the sound of the splash. The sound of the splash travels backup the well at a constant speed of 330m/s. If the well is 240m deep, how long does the student have to wait to hear the splash?