VECTOR WORKSHEET

DIRECTIONS 1: Solve the following problems **GRAPHICALLY on graph paper**. Be sure to label vectors and resultants with both magnitude and direction. Box your final answer.

DIRECTIONS 2: Solve the following problems **TRIGONOMETRICALLY** using the component method of vector addition. Be sure to space and organize your work so that it can be easily read. Box your final answer.

1. To escape the homecoming committee, Matthew and Brendan run 10.0 m east, then 25 m 30.0° N of E. How far are they from their starting position? In other words, what is their resultant displacement? *(34.1m, 21.5° N of E)*

2. While Arlie is rushing to guy cheer practice with a velocity 4.70 m/s at 60.0° S of E, he is blindsided by Alex pushing the snack cart at 2.2 m/s in a northerly direction. What is Arlie's resultant velocity? *(3.00 m/s, 38.6° S of E)*

3. Phour of Ms. Skinner's phaboulous physics students, run like the wind when they find out they have to make confetti for the homecoming pep rally (their individual velocities are below). What is their resultant velocity? *(5.23 m/s, 57.1° N of E)*

   3.60 m/s W
   5.60 m/s 60.0° S of E
   5.15 m/s NE
   5.60 m/s N

4. In his quest to find his formula card that he thinks he lost while making homecoming signs, Ethan walks 40.0 m NW, 70.0 m N, and 80.0 m 30.0° N of E. What is his resultant displacement from his original starting point? *(144 m, 73.5° N of E)*

5. While Millie and Nathan are hurrying (15.2 m/s, 55° N of W) to take the crash sign to the football field, they are blown by a wind which has a velocity of 4.2 m/s at 35°S of W. What is their resultant velocity? *(16 m/s, 50° W of N)*