



Physics

Name: _____

LAB #2: VECTOR ORIENTEERING Date: _____

Vector Orienteering

Lab #2

Purpose: To graphically add three vectors as accurately as possible. Also, to win the game.

Method: Your team will be assigned three vectors. Begin at the center of a sheet of graph paper placed in landscape orientation. Carefully draw the three vectors in a head-to-tail arrangement. Draw the resultant vector; then determine its magnitude and direction. All of this is done graphically. Write down and turn in your results. Each person on the team should produce a drawing. When this part has been completed, use components to add the three vectors algebraically. Team members should individually solve for the resultant vector algebraically. When all team members have completed this work, then team members can compare work to improve academic integrity.

Show all work, including the values of all components. Your instructor will judge which team was able to draw the most accurate resultant vector.

Part A (Graphic) Resultant Vector:

When you have completed your graphic analysis, report your results below.

Magnitude = _____

Angle = _____

Part B (Algebraic Resultant Vector)

You must show all your work on a separate sheet of lined paper. When you have completed your analysis, report your results below.

Magnitude = _____

Angle = _____

The Final Report: Include this sheet and all your graphs and calculations.

The Vectors for Each Team:

Team 1: 9.2 cm, 133°; 15.2 cm, 331°; 8.1 cm, 241°

Team 2: 7.4 cm, 158°; 16.4 cm, 18°; 10.3 cm, 262°

Team 3: 7.6 cm, 211°; 15.6 cm, 351°; 13.8 cm, 114°

Team 4: 7.8 cm, 243°; 16.8 cm, 37°; 9.4 cm, 152°

Team 5: 8.1 cm, 282°; 15.3 cm, 58°; 10.5 cm, 172°

Team 6: 8.3 cm, 315°; 16.5 cm, 83°; 10.7 cm, 198°

Team 7: 8.5 cm, 103°; 15.7 cm, 312°; 16.2 cm, 167°

Team 8: 8.7 cm, 111°; 16.9 cm, 328°; 14.8 cm, 208°