

## Experiment 3 — Vector Addition

Lab Meets \_\_\_\_\_

1. What is the objective of this experiment?
2. If a 10 N force at 0 degrees and a 10 N force at 90 degrees are added, what is the direction of the equilibrant?
3. How does the force table apparatus work?
4. Vectors are quantities that follow specific combination rules. Give two examples of these vector combination rules?
5. Add the given vectors by the *component method*, by completing the table below. **Show all work** (i.e., all calculations). What is the angle of the resultant vector with respect to the *x*-axis? Use the back of this sheet if necessary

$\mathbf{A} = 4.0 \text{ N at } 135^\circ$ ,  $\mathbf{B} = 7.5 \text{ N at } 305^\circ$ ,  $\mathbf{C} = 9 \text{ N at } 170^\circ$

Vector	x component (N)	y-component (N)
<b>A</b>		
<b>B</b>		
<b>C</b>		
<b>A+B+C</b>		