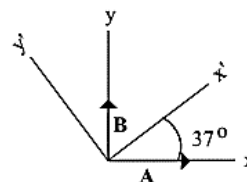


Name _____ Instructor name _____

You must show and explain all work neat and organized to receive credit. Please show each step for calculations. YOU MUST TURN IN THIS SHEET to have your assignment graded.

1. A resultant vector is 8.00 units long and makes an angle of 43.0 degrees measured *counter – clockwise* with respect to the positive x – *axis*. What are the magnitude and angle (measured *counter – clockwise* with respect to the positive x – *axis*) of the equilibrant vector? Please show all steps in your calculations (5 pts)

2. Two vectors, $\mathbf{A}$, and $\mathbf{B}$, are drawn on an $x - y$ coordinate system, as shown. Vector $\mathbf{A}$ has a magnitude of 9.00 units, and vector $\mathbf{B}$ has a magnitude of 5.00 units. Find the x – and y – *components* of vectors $\mathbf{A}$ and $\mathbf{B}$ in the $x - y$ system. Compute the magnitude of the resultant in the $x - y$ coordinate system.



A second coordinate system, the $x' - y'$ system, is rotated 37.0° with respect to the $x - y$ system, as shown. Find the x' – and y' – *components* of $\mathbf{A}$ and $\mathbf{B}$ in the $x' - y'$ system. Compute the magnitude of the resultant in the $x' - y'$ coordinate system. (Hint: Calculate the angle that $\mathbf{A}$ and $\mathbf{B}$ made with respect to the $x' - y'$ axes.) (10 pts)

3. Specify the sign (positive or negative) of the x – and y – *components* of a vector in each of the four quadrants (1, 2, 3, and 4) by completing the table. (5 pts)

	x – <i>component</i>	y – <i>component</i>
Quadrant 1 (0 – 90 <i>degrees</i>)		
Quadrant 2 (90 – 180 <i>degrees</i>)		
Quadrant 3 (180 – 270 <i>degrees</i>)		
Quadrant 4 (270 – 360 <i>degrees</i>)		