

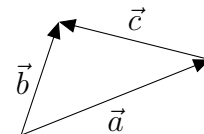
**Instructions** Please write your name in the upper right-hand corner of the page.

Write your solutions in complete sentences. For instance, your answer to the question “What is your favorite color?” should be not “maroon” but “My favorite color is maroon.”

If you need more space to write your solutions, you may use the back of the page or a separate sheet of paper.

1. Where does our class meet on Friday?

2. In the diagram, vector  $\vec{a} = \langle 5, 2 \rangle$  and vector  $\vec{b} = \langle 1, 3 \rangle$ . Find the components of vector  $\vec{c}$ .



3. Find a vector that is orthogonal to the vector  $\langle 2, 4 \rangle$ . Is there more than one correct answer? Explain.
4. Suppose a constant force of 5 N moves an object a distance of 10 m. If the work done is equal to 25 J, what is the angle between the force vector and the displacement vector?
5. Suppose the scalar projection of vector  $\vec{v}$  onto vector  $\vec{w}$  is equal to the scalar projection of vector  $\vec{w}$  onto vector  $\vec{v}$ . What deduction can you make about the vectors  $\vec{v}$  and  $\vec{w}$ ?