

**Name:**

1. Let  $V$  be the set of all ordered pairs of real numbers, and consider the following addition and scalar multiplication operations on  $\vec{u} = (u_1, u_2)$  and  $\vec{v} = (v_1, v_2)$ :

$$\vec{u} + \vec{v} = (u_1 + v_1, u_2 + v_2) \quad \text{and} \quad k\vec{u} = (0, ku_2).$$

Show that Axiom 7 holds in  $V$ .