

**Provide a counterexample to justify each of the following false statements.**

16. If  $\vec{w}$  is a linear combination of  $\vec{u}$  and  $\vec{v}$  in  $\mathbb{R}^3$ , then  $\vec{u}$  is a linear combination of  $\vec{v}$  and  $\vec{w}$ .

17. Suppose that  $\vec{v}_1, \vec{v}_2$  and  $\vec{v}_3$  are in  $\mathbb{R}^5$ ,  $\vec{v}_2$  is not a multiple of  $\vec{v}_1$ , and  $\vec{v}_3$  is not a linear combination of  $\vec{v}_1$  and  $\vec{v}_2$ . Then  $\{\vec{v}_1, \vec{v}_2, \vec{v}_3\}$  is linearly independent.