

**Name:**

[4] 1. Is  $\mathbb{R}^2$  a subset of  $\mathbb{C}^2$ ? Why or why not?

[6] 2. Given that the set  $\{1, x, x^2\}$  spans the vector space  $V = P_2(\mathbb{R})$ , show that the set

$$\{1 - x, x - x^2, x^2\}$$

also spans  $V$ .