## Instructions

**1.** To receive full credit you must explain how you got your answer.

**2.** While I encourage collaboration, you must write solutions IN YOUR OWN WORDS. DO NOT SHARE COMPLETE SOLUTIONS before they are due. YOU WILL RECEIVE NO CREDIT if you are found to have copied from whatever source or let others copy your solutions.

**3.** Workshop must be handwritten (electronic handwriting is allowed) for authentication purposes and submitted on Canvas. Late submission will NOT be accepted. It is your responsibility to MAKE SURE THAT YOUR SUBMISSIONS ARE SUCCESSFUL AND YOUR FILES ARE LEGIBLE AND COMPLETE. It is also your responsibility that whoever reads your work will understand and enjoy it. 1 point out of 10 may be taken off if your solutions are hard to read or poorly presented.

## Workshop 2

**1.** Let $\mathcal{P}_n$ denote the set of all polynomials of the form $a_0 + a_1 x + ... + a_n x^n$, where n is a non-negative integer and $a_0, a_1, ..., a_n$ are real numbers.

a. Define appropriate addition and scalar multiplication on $\mathcal{P}_n$ and show that it is a vector space over $\mathbb{R}$.

b. Show that $\mathcal{P}_1$ is a subspace of $\mathcal{P}_2$. Can you generalize this statement?

c. Show that you can do the same over $\mathbb{C}$.