The PAR Process

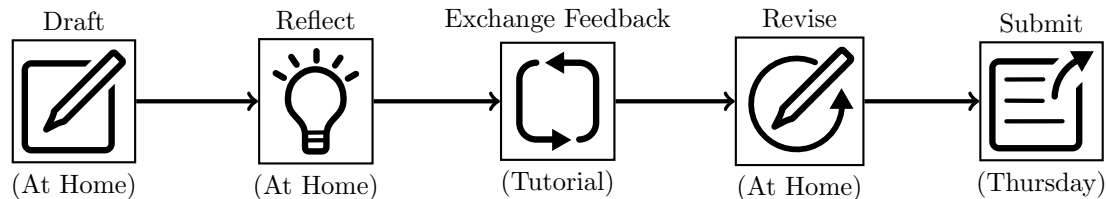| Draft	Reflect	Exchange Feedback	Revise	Submit
(At Home)	(At Home)	(Tutorial)	(At Home)	(Thursday)

Welcome to your first writing assignment in MAT224. The purpose of writing assignments is to (i) apply ideas learned in class in new ways and (ii) articulate mathematical arguments clearly and correctly. When tutorials start, we will use a process called Peer-Assisted Reflection (PAR) to help strengthen your writing skills. For this assignment, we will not be doing PAR, but the PAR feedback form has been included for your edification.

For any writing assignment you should first think about the problem and work it out on scratch paper; then you should write or type the solution to the problem on a new piece paper. Your writeup should be legible and explain your solution. *The purpose of writing assignments is not to get the answer but to communicate the answer and the process effectively.* Good writeups are written in complete English sentences (that include punctuation marks like commas and periods). They tell a story: starting with definitions and "what we want to show" and leading through logical arguments to a conclusion. (Be careful not to confuse writing well with writing a lot; a well-written homework might be three sentences or it might be a page.)

Make sure you define any terms that you use in your writeup. For example, this problem relates to vector spaces and subspaces—you should define these terms.

Your writeup will be marked based on effort, but you will be given feedback on what you need to do to improve your writeups. On each exam there will be problems that require you to provide a well-written argument. These problems will be graded based on correctness and on how well-written they are, so please put in the effort to learn good writing in the low-stakes environment of your writing assignments.

Problem Statement

Let $\mathcal{P}_2$ be the real vector space of polynomials of degree at most 2 (with real coefficients) equipped with the usual addition and scalar multiplication, and let $\mathcal{R}_2 \subseteq \mathcal{P}_2$ be defined as $\mathcal{R}_2 = \{p \in \mathcal{P}_2 : p \text{ has only real roots}\}$.

Is $\mathcal{R}_2$ a subspace?

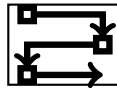*Hint: you can tell if a polynomial has real roots by examining the quadratic equation.*

Reflection

Turn the page and check off the icons for things you think you did well; circle the icons for things you would like feedback on.

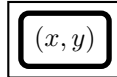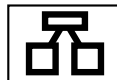| **Suggestions**	Communication	**Strengths**

Show All Steps

Explain Why,
Not Just What

Avoid Pronouns

Use Correct
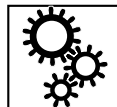Definitions

Define Variables,
Units, etc.

Create Diagrams
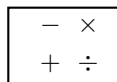
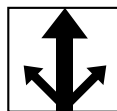| **Suggestions**	Accuracy	**Strengths**

Correct Setup

Accurate Calculations

Solve Multiple Ways

Answer Reasonable

Other
(Write Below)