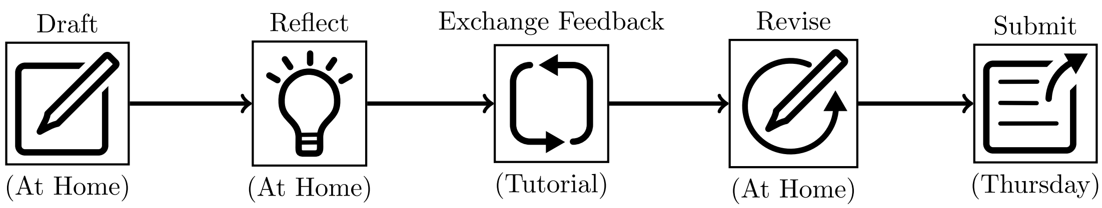
MAT224
PAR 3

Due: Week 4 Tutorial (draft), February 1 (final)
Name:__________________________

The PAR Process



Problem Statement

Let $\mathcal{X}$ be a real vector space. Suppose $\{\vec{v}_1, \vec{v}_2, \vec{v}_3\} \subset \mathcal{X}$ is a linearly independent set, and suppose $\{\vec{w}_1, \vec{w}_2, \vec{w}_3\} \subset \mathcal{X}$ is a linearly dependent set. Define $\mathcal{V} = \operatorname{span}\{\vec{v}_1, \vec{v}_2, \vec{v}_3\}$ and $\mathcal{W} = \operatorname{span}\{\vec{w}_1, \vec{w}_2, \vec{w}_3\}$.

(a) Is there a linear transformation $\mathcal{P} : \mathcal{V} \to \mathcal{W}$ such that $\mathcal{P}(\vec{v}_i) = \vec{w}_i$ for $i = 1, 2, 3$?

(b) Is there a linear transformation $\mathcal{Q} : \mathcal{W} \to \mathcal{V}$ such that $\mathcal{Q}(\vec{w}_i) = \vec{v}_i$ for $i = 1, 2, 3$?

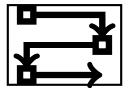
Hint: the easiest way to show a linear transformation exists is to define *a particular linear transformation. To define a linear transformation, you must specify what it does to every element in its domain.*

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.

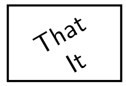
Feedback Provided By:____________________________

Suggestions	Communication	**Strengths**

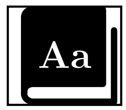


Show All Steps

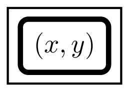
Explain Why,
Not Just What



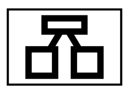
Avoid Pronouns



Use Correct
Definitions

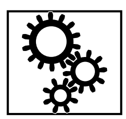


Define Variables,
Units, etc.

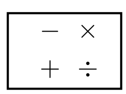


Create Diagrams

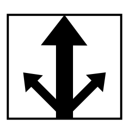
Suggestions	Accuracy	**Strengths**



Correct Setup

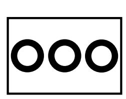


Accurate Calculations



Solve Multiple Ways

Answer Reasonable



Other
(Write Below)