

Group Project Part 2

Students will work in March on this project but may only join after completing Lesson 9.

In this group project all the teams will prove the following three theorems (using the justifications listed below):

Theorems about Matrix Multiplication

$$\text{Thm I: } A(\vec{v} + \vec{w}) = A\vec{v} + A\vec{w} \text{ for } A \in M_{n \times m}, \vec{v}, \vec{w} \in \mathbb{R}^m$$

$$\text{Thm II: } A(k\vec{v}) = k(A\vec{v}) \text{ for } k \in \mathbb{R}, A \in M_{n \times m}, \vec{v} \in \mathbb{R}^m$$

$$\text{Thm III: } A(s\vec{v} + t\vec{w}) = s(A\vec{v}) + t(A\vec{w}) \text{ for } s, t \in \mathbb{R}, A \in M_{n \times m}, \vec{v}, \vec{w} \in \mathbb{R}^m$$

Justifications you may use to prove these theorems

Definition of $M_{n \times m}$ and Definition of \mathbb{R}^m

Defn of Matrix mult by a vector (Lesson 6)

Defn of Addition of Vectors (Lesson 1)

Defn of Scalar Multiplication of vectors (Lesson 1)

Distribution of reals: $a(b+c) = ab+ac$ for $a, b, c \in \mathbb{R}$

Distribution of reals: $(a+b)c = ac+bc$ for $a, b, c \in \mathbb{R}$

Commutativity of reals: $a \cdot b = b \cdot a$ for $a, b \in \mathbb{R}$

In Part 2 all students are trying to earn three points by contributing three correct statements and justifications. Students who do extra work earn extra credit that can make up for earning less than five points in Part I.

Students can also earn leadership extra credit by typing polite corrections and encouragement to classmates.

Team-2a

Achi, Emmanuel O

Adam, Salma

Ahmed, Minna

Almanzar, Yuleidy (a team leader)

Babsail, Yousuf

Cheng, Ken

Duran, Anthony B (a team leader)

Ellis Navarro, Franly

Goldson I, Taffarie M

Team-2b

Hernandez, Richard

Garcia, Emmanuel (a team leader)

Houmada, Soukaina

Hunter, Graeme

Martin, Jessica L (a team leader)

Mercado, Abbie

Myers, Justin Micheal

Nathan Jr, Charles N

Skeen, Onandi (a team leader)

Otten, Anthony A

Team-2c

Olowu, Babatunde

Palacio, Anthony

Ouandaogo, Wily C (a team leader)

Ramirez, Adolfo

Reyes, Daniel Martin (a team leader)

Rosario, Jeffrey A

S Chang, Chris

Samad, Juhayer

Touray, Chondi H

Warner, Nephitiri O

The leaders above were selected based on the quality of their submission of Lesson 9.