Week 2 Day 3

Your Mathematical Learning Community

Turn to someone sitting near you. Make sure you know each other's names, and then take about 2 minutes to discuss:

What is your current mathematical learning community like? Have you been talking to classmates in class (either lecture or discussion)? Do you have people to talk to about math outside of class? What suggestions would you give to someone at UCSD who might feel mathematically isolated but wants to have people to talk to about math?

Reminder

Canvas Survey

Linear Transformations

1. (A) True or (B) False? The function $T : \mathbb{R}^2 \to \mathbb{R}^2$ that reflects points across the x-axis is a linear transformation.

2. (A) True or (B) False? The function $T : \mathbb{R}^2 \to \mathbb{R}^2$ that reflects points across the vertical line $x = 1$ is a linear transformation.

3. (A) True or (B) False? The function $T : \mathbb{R}^2 \to \mathbb{R}$ given by

$$T\begin{bmatrix} x \\ y \end{bmatrix} = x + y$$

is a linear transformation.

4. (A) True or (B) False? The function $T : \mathbb{R}^2 \to \mathbb{R}^2$ given by

$$T\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} x+1 \\ y \end{bmatrix}$$

is a linear transformation.

5. (A) True or (B) False? The linear function $T : \mathbb{R}^2 \to \mathbb{R}^2$ given by $T(\mathbf{x}) = A\mathbf{x}$ for the following matrix A is a rotation.

$$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$$