

You can preview this quiz, but if this were a real attempt, you would be blocked because:

This quiz is not currently available

Question **1**

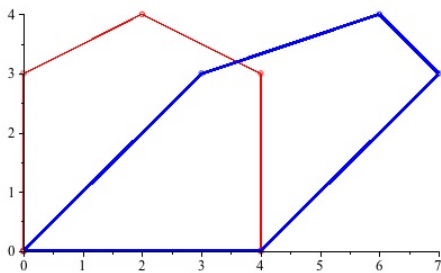
Not complete

Points out of 1.00

Use these questions as a way to review and solidify the language of linear algebra as well as computations and conceptual understanding. If you are stuck, use ASU Learn resources and your notes to help you. I'm also happy to help in office hours.

Write all responses in your notes since you'll be comparing them with the re-engage later.

What is the matrix representation of this [linear transformation](#) that inputs the red house that is upright and outputs the blue house?



When you are finished, type transformation in the box

Check

Question 2

Not complete

Points out of 1.00

To [rotate](#) a figure counterclockwise by $\theta = 30$ degrees about the point (5,7) can we apply

$$\begin{bmatrix} 1 & 0 & 5 \\ 0 & 1 & -7 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} \cos \frac{\pi}{6} & -\sin \frac{\pi}{6} & 0 \\ \sin \frac{\pi}{6} & \cos \frac{\pi}{6} & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 & -5 \\ 0 & 1 & 7 \\ 0 & 0 & 1 \end{bmatrix} \text{ Figure?}$$

If so write this in your notes and if not then write the correction in your notes.

When you are finished, type [rotate](#) in the box

Question 3

Not complete

Points out of 1.00

In your notes, sketch input and output diagrams of [projection](#) of a figure in 2-space (your creation!) [onto](#) the $y = x$ [line](#).

When you are finished, type [projection](#) in the box

Next, write a matrix representation of this [linear transformation](#) that projects [vectors](#) in \mathbb{R}^2 [onto](#) the $y = x$ [line](#). Write down the matrix in your notes and label it as A .

When you are finished, type matrix in the box

Lastly, show by-hand work in your notes to obtain the [null space](#) of this matrix, the set of [solutions](#) to $A\vec{x} = 0$

When you are finished, type [null space](#) in the box

Question **4**

Not complete

Points out of 2.00

In your notes sketch the input and output diagrams of [translation](#) of a figure in 3-space (your creation!) 5 units in the z direction.

When you are finished, type [translation](#) in the box

Next, what is a matrix representation of translating [vectors](#) in \mathbb{R}^3 by 5 units in the z direction?. Write down the matrix in your notes and label it as *A*.

When you are finished, type matrix in the box

Check

Question **5**

Not complete

Points out of 1.00

If a [linear transformation](#) squishes space, e.g., say squishes from 2-space or 3-space to a [line](#) or the origin or squishes from 3-space to a [plane](#), is the transformation [invertible](#)? Respond in your notes.

When you are finished, type squishes in the box

Check

Question **6**

Not complete

Points out of 1.00

Is a horizontal [shear invertible](#)? Respond in your notes.

When you are finished, type [shear](#) in the box

Check

Question **7**

Not complete

Points out of 1.00

Given only a visualization of a [linear transformation](#) acting on 2-space or 3-space, how can we visualize the [column space](#) of the corresponding matrix representation? Respond in your notes.

When you are finished, type [column space](#) in the box

Check

Question **8**

Not complete

Points out of 2.00

How did [transpose](#) arise in this module? Respond in your notes.

When you are finished, type [transpose](#) in the box

How did [orthogonality](#) arise in this module? Respond in your notes.

When you are finished, type [orthogonality](#) in the box

Check