ⓘ Students have either already taken or started taking this quiz, so take care when editing it. If you change any quiz questions in a significant way, you might want to consider re-grading students' quizzes who took the old version of the quiz.

Points 100 Published

Details Questions

Show question details

Group 1

Group Name Pick 1 questions, 5 pts per question Pick ☐ questions, ☐ pts per question

Cancel Update

Question 1 pts

Which of the following statements is/are correct for matrix A= $\begin{bmatrix} 1 & 2 \\ 2 & 4 \end{bmatrix}$

- Singular matrix
- |A| = 0
- Inverse doesn't exist
- None of the given

Question 1 pts

find the product **AB** where A= $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ and B=$\begin{bmatrix} 4 & 5 & 6 \end{bmatrix}$

- $\begin{bmatrix} 4 & 5 & 6 \\ 8 & 10 & 12 \\ 12 & 15 & 18 \end{bmatrix}$

- $\begin{bmatrix} 4 & 5 & 6 \\ 8 & 10 & 12 \\ 12 & 18 & 15 \end{bmatrix}$
- 32
- Can not find the product AB

Group 2

Group Name Pick 6 questions, 10 pts per question Pick ☐ questions, ☐ pts per question

Cancel Update

Question 1 pts

The matrix is $\begin{bmatrix} 1 & 2 & 3 \\ 0 & 3 & 2 \\ 0 & 0 & 1 \end{bmatrix}$ non-singular. Is the statement True or False?

- True
- False

Question 1 pts

Given four sets of vectors:

$$S1 = \left\{ \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}, \begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix}, \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix} \right\}, S2 = \left\{ \begin{bmatrix} 1 \\ -1 \\ 0 \end{bmatrix}, \begin{bmatrix} 0 \\ 1 \\ -1 \end{bmatrix}, \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix} \right\},$$

$$S3 = \left\{ \begin{bmatrix} 1 \\ -1 \\ 0 \end{bmatrix}, \begin{bmatrix} 0 \\ 1 \\ -1 \end{bmatrix}, \begin{bmatrix} -1 \\ 0 \\ 1 \end{bmatrix} \right\}, \text{ and } S4 = \left\{ \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}, \begin{bmatrix} -1 \\ -2 \\ -3 \end{bmatrix}, \begin{bmatrix} 2 \\ 4 \\ 6 \end{bmatrix} \right\}$$

Match the left hand side items with right hand side characteristics.

S1

Set of Linearly independent Vectors

S2

Set of Linearly independent Vectors

S3

Set of Linearly independent Vectors

S4

Set of Linearly dependent Vectors

Question 1 pts

A set of vectors $\{\mathbf{v}_1, \mathbf{v}_2, \cdots, \mathbf{v}_n\} \in \mathbb{R}^m$ is said to be ***linearly independent*** if

the linear combination of the vectors
$\alpha_1\mathbf{v}_1 + \alpha_2\mathbf{v}_2 + \cdots + \alpha_n\mathbf{v}_n = \mathbf{0}$

- if and only if the real numbers $\alpha_1 = \alpha_2 = \cdots = \alpha_n = 0$.

the linear combination of the vectors

$\alpha_1\mathbf{v}_1 + \alpha_2\mathbf{v}_2 + \cdots + \alpha_n\mathbf{v}_n = \mathbf{0}$

- if there exists real numbers $\alpha_1, \alpha_2, \cdots, \alpha_n$, not all equal to zero.

the linear combination of the vectors

$\alpha_1\mathbf{v}_1 + \alpha_2\mathbf{v}_2 + \cdots + \alpha_n\mathbf{v}_n = \mathbf{0}$

- if there exists real numbers $\alpha_1, \alpha_2, \cdots, \alpha_n$, not all equal to zero.

Question 1 pts

The solution of the following system of linear equation $\begin{bmatrix} 2 & 1 & -1 \\ -3 & -1 & 2 \\ -2 & 1 & 2 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 8 \\ -11 \\ -3 \end{bmatrix}$

is

- $x = 2, y = 3, \text{ and } z = -1$
- $x = 2, y = 3, \text{ and } z = 1$

- $x = 1, y = 3, \text{ and } z = -1$
- The system of equations is inconsistent

Question 1 pts

Find the determinant of A= $\begin{bmatrix} 1 & 2 & -3 \\ -1 & 0 & 1 \\ -2 & 2 & 1 \end{bmatrix}$

- 2
- 1
- 0
- None of the given

Question 1 pts

Find the inverse of the following matrix if exists.

A= $\begin{bmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \\ 2 & 4 & 6 \end{bmatrix}$

- Singular matrix
- Inverse does not exist
- Determinant of the system is zero
- $\begin{bmatrix} 0 & -10 & -15 \\ -1 & 3 & 3 \\ 1 & 2 & 2 \end{bmatrix}$

Question 1 pts

What is the determinant of the matrix $\begin{bmatrix} -1 & 2 & 2 \\ 3 & -6 & 4 \\ 5 & -10 & -3 \end{bmatrix}$?

- 0

- -10
- 10
- None of the given

Question 1 pts

The matrices $\mathbf{A} = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$ and $\mathbf{B} = \begin{bmatrix} 2 & -3 \\ -1 & 2 \end{bmatrix}$ are inverse of each other. Is this statement True or False?

- True
- False

Group 3

Group Name Pick 1 questions, 15 pts per question Pick □ questions, □ pts per question

Cancel Update

Question 1 pts

Identify whether the following system is consistent or inconsistent.

$$x + y + z = 3$$
$$2x - y + z = 2$$
$$3y + z = 1$$

- Inconsistent
- Consistent
- Can not determine

Question 1 pts

Find the equation having g, h, and k that makes the following augmented matrix correspond to a consistent system

$$\left[\begin{array}{ccc|c} 1 & -4 & 7 & g \\ 0 & 3 & -5 & h \\ -2 & 5 & -9 & k \end{array}\right]$$

- $h+2g+k=0$
- $h+2g+k\neq 0$
- $h+g+k=0$
- None of the given

Group 4

Group Name Pick 1 questions, 20 pts per question Pick questions, pts per question

Cancel Update

Question 1 pts

Which of the following statements is/are true for the given system?

$$\begin{aligned} x+3y&=2 \\ 3x+hy&=k \end{aligned}$$

- [ ] It has an unique solution when $h\neq 9$
- [ ] No solution when $h=9$ and $k\neq 6$
- [ ] Many solutions when $h=9$ and $k=6$
- [ ] None of the given

Question 1 pts

Find the inverse of B= $\begin{bmatrix} 1 & 1 & 0 \\ 1 & 2 & 1 \\ 2 & 3 & 2 \end{bmatrix}$

- [ ] $\begin{bmatrix} 1 & -2 & 1 \\ 0 & 2 & -1 \\ -1 & -1 & 1 \end{bmatrix}$
- [ ] $\begin{bmatrix} 1 & 2 & 1 \\ 0 & 2 & -1 \\ -1 & -1 & 1 \end{bmatrix}$
- [ ] $\begin{bmatrix} 1 & -2 & 1 \\ 0 & 2 & -1 \\ -1 & -1 & 0 \end{bmatrix}$
- [ ] None of the given

Question 1 pts

What is the inverse of the matrix $\mathbf{B} = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$?

- $\begin{bmatrix} 7 & -3 & -3 \\ -1 & 1 & 0 \\ -1 & 0 & 1 \end{bmatrix}$
- $\begin{bmatrix} 7 & -3 & -3 \\ 1 & -1 & 0 \\ -1 & 0 & 1 \end{bmatrix}$
- $\begin{bmatrix} 7 & 3 & 3 \\ -1 & 1 & 0 \\ -1 & 0 & 1 \end{bmatrix}$
- None of the given

+ New question + New question group Find questions

Notify users this quiz has changed

Cancel Save