Assessment 1: Assessment Quiz

Started: Sep 30 at 14:19

Quiz Instructions

Assessment Information

Attached Files: **Assessment 1 Brief.pdf (https://mylearn.torrens.edu.au/courses/19622/files/7304584?verifier=mKeX1d3gUwfqtVJlQCehb6ybKdcl7j5NlxG11Er6)**

Please refer to the assessment brief attached above for details on how to complete this assessment.

Click on the link below to submit your assessment

- **Quiz Duration:** 60 Minutes
- **Number of Questions:** 20 Questions
- **Quiz Weight:** 20%
- **Attempts Allowed:** 1 Attempt
- **Additional Information:** This quiz covers the content in modules 1-2

TECHNICAL INSTRUCTION

We strongly recommend that you complete the quiz in its entirety once you start. You may exit the browser and return to complete the quiz later; however, please note that the countdown timer will continue to run even with the browser closed. Once you submit your answers, they will be locked, and you will not be able to make any changes.

ACADEMIC INTEGRITY and MISCONDUCT

By attempting this assessment task, you agree to adhere to the policies and procedures on Academic Integrity before, during, and following this assessment task. The Academic Integrity policy and procedure can be **viewed online (http://www.torrens.edu.au/policies-and-forms)** .

We are committed to fostering integrity in the pursuit of knowledge and to produce graduates with a strong sense of professional ethics. As a student, you have an obligation to work independently and apply scholarly academic conventions in your assessment tasks. Any form of cheating, plagiarism, collusion, or other forms of dishonesty carries serious consequences as they are addressed seriously and thoroughly according to the **Academic Integrity Policy (https://www.torrens.edu.au/policies-forms)** . We encourage you to familiarize yourself with this policy and the different types of academic misconduct you must avoid, as well as your responsibilities as a student.

Declaration

By attempting this quiz you, as a student agree to adhere to the full Laureate policies and procedures on Academic Integrity prior to, during and following this assessment.

Students please note, all quizzes are closed book assessments and no learning materials are to be used in the completion of the quiz.

Question 1 1 pts

The following matrix has 3 number of rows and 2 number or columns

$$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$$

Question 2 1 pts

If $a = \begin{bmatrix} 1 \\ 2 \\ 9 \\ 4 \\ 5 \end{bmatrix}$ and $b = \begin{bmatrix} 2 \\ 1 \\ 0 \\ -2 \\ -6 \end{bmatrix}$, what is the result of a + b?

- $\begin{bmatrix} 3 \\ 3 \\ 9 \\ 2 \\ -1 \end{bmatrix}$
- $\begin{bmatrix} -1 \\ 1 \\ 9 \\ 6 \\ 11 \end{bmatrix}$
- [3 3 9 2 -1]
- [-1 1 9 6 11]

Question 3 1 pts

If $a = \begin{bmatrix} 1 \\ 2 \\ 9 \\ 4 \\ 5 \end{bmatrix}$ and $b = \begin{bmatrix} 2 \\ 1 \\ 0 \\ -2 \\ -6 \end{bmatrix}$, what is the result of a + b?

○ $\begin{bmatrix} 3 \\ 3 \\ 9 \\ 2 \\ -1 \end{bmatrix}$

○ $\begin{bmatrix} -1 \\ 1 \\ 9 \\ 6 \\ 11 \end{bmatrix}$

◉ [3 3 9 2 -1]

○ [-1 1 9 6 11]

Question 4 1 pts

If $a = \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$, the magnitude of this vector is equal to:

○ 7.3

○ 3.4

◉ 3.7

○ 4

Question 5 1 pts

If $b = \begin{bmatrix} -2 \\ -1 \\ 0 \\ 2 \\ 6 \end{bmatrix}$, the magnitude of this vector is equal to:

○ 7.3

○ 3.4

○ 3.7

◉ 6.7

Question 6 1 pts

$(AB)^{-1} = B^{-1}A^{-1}$

◉ True

○ False

Question 7 1 pts

Calculate the unit vector for $\hat{a} = [4 \quad 2 \quad 1 \quad 3 \quad 5]$

○ $\hat{a} = [4 \quad 2 \quad 1 \quad 3 \quad 5]$

○ $\hat{a} = 7.4$

◉ $\hat{a} = [0.5 \quad 0.2 \quad 0.1 \quad 0.4 \quad 0.6]$

○ $\hat{a} = [0.6 \quad 0.4 \quad 1 \quad 0.2 \quad 0.5]$

Question 8 1 pts

Which one is the dot product ($a \cdot b$) for the vectors

$$a = \begin{bmatrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \end{bmatrix} \text{ and } b = \begin{bmatrix} 5 \\ 4 \\ 3 \\ 2 \\ 1 \end{bmatrix}.$$

○ 53

○ 44

◉ 35

○ 60

Question 9 1 pts

Which one is the cross product (*a* x *b*) for the vectors $a = \begin{bmatrix}1\\2\\3\end{bmatrix}$ and $b = \begin{bmatrix}5\\4\\3\end{bmatrix}$.

○ [22 22 22]

○ 22

◉ [-6 12 -6]

○ [12 -6 -6]

Question 10 1 pts

Given the following matrices, what is the results of *AB*

$$A = \begin{bmatrix}3 & 0 & 6\\4 & 5 & 1\end{bmatrix} \quad , \quad B = \begin{bmatrix}1 & 0 & 1\\2 & 1 & 2\\3 & 3 & 3\end{bmatrix}$$

○ $\begin{bmatrix}3 & 4\\0 & 5\\6 & 1\end{bmatrix}$

◉ $\begin{bmatrix}21 & 18 & 21\\174 & 8 & 17\end{bmatrix}$

○ $\begin{bmatrix}9 & 5\\18 & 15\\27 & 30\end{bmatrix}$

○ 24

Question 11 1 pts

Given the following matrices, what is the results of A^T

$$A = \begin{bmatrix} 3 & 0 & 6 \\ 4 & 5 & 1 \end{bmatrix} \quad , \quad B = \begin{bmatrix} 1 & 0 & 1 \\ 2 & 1 & 2 \\ 3 & 3 & 3 \end{bmatrix}$$

(●) $\begin{bmatrix} 3 & 4 \\ 0 & 5 \\ 6 & 1 \end{bmatrix}$

( ) $\begin{bmatrix} 21 & 18 & 21 \\ 174 & 8 & 17 \end{bmatrix}$

( ) $\begin{bmatrix} 9 & 5 \\ 18 & 15 \\ 27 & 30 \end{bmatrix}$

( ) 24

Question 12 1 pts

Given the following matrices, what is the results of $B\,A^T$

$$A = \begin{bmatrix} 3 & 0 & 6 \\ 4 & 5 & 1 \end{bmatrix} \quad , \quad B = \begin{bmatrix} 1 & 0 & 1 \\ 2 & 1 & 2 \\ 3 & 3 & 3 \end{bmatrix}$$

( ) $\begin{bmatrix} 3 & 4 \\ 0 & 5 \\ 6 & 1 \end{bmatrix}$

( ) $\begin{bmatrix} 21 & 18 & 21 \\ 174 & 8 & 17 \end{bmatrix}$

(●) $\begin{bmatrix} 9 & 5 \\ 18 & 15 \\ 27 & 30 \end{bmatrix}$

( ) 24

Question 13 1 pts

What are the values of x and y after solving the following equations using elimination?

3x - y = 5

x + 5 = 3

○ (x, y) = (1, 2)

○ (x, y) = (2, 2)

○ (x, y) = (1, 1)

◉ (x, y) = (2, 1)

Question 14 1 pts

What are the values of x and y after solving the following equations using elimination?

2x - y = 3

3x + 5y = -2

○ (x, y) = (1, 1)

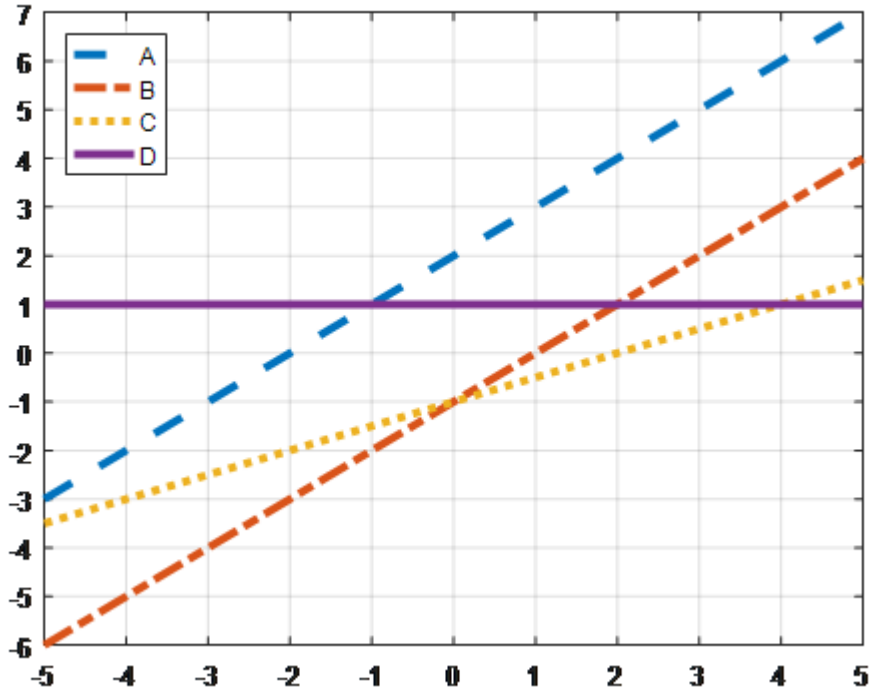
◉ (x, y) = (1, -1)

○ (x, y) = (-1, 1)

○ (x, y) = (-1, -1)

Question 15 1 pts

Which of the following lines represents y - x = 0



○ A

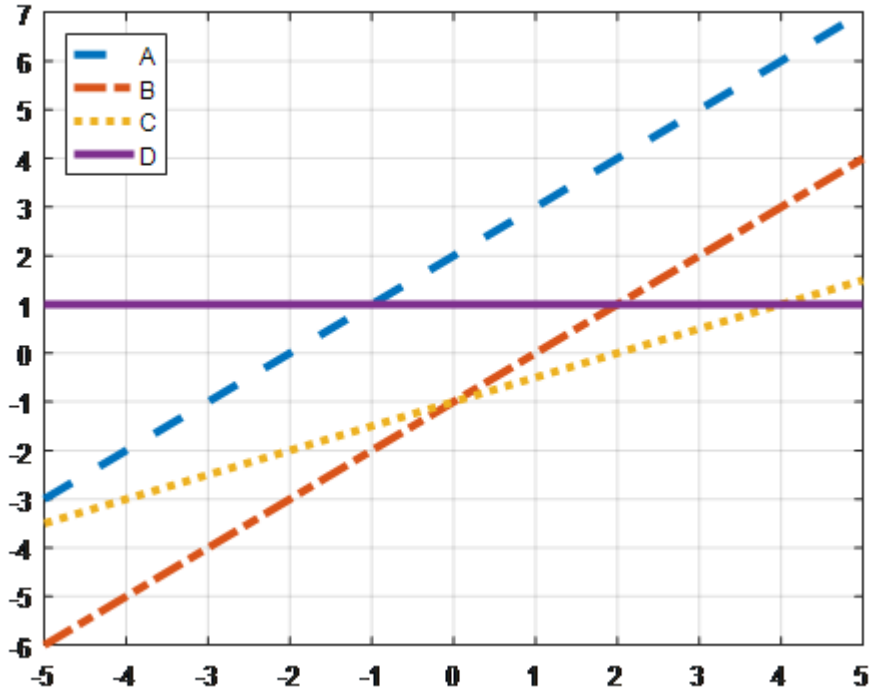
◉ B

○ C

○ D

Question 16 1 pts

In the following figure, the line C is show with which equation?



○
y - x = 0

◉
y - x = -1

○
y = 1

○
2y - x = -2

Question 17 1 pts

After using the Gaussian elimination method to solve the following equations, what will be the values of x, y, and z?

$$5 + 2y = 2$$
$$2x + y - z = 0$$
$$2x + 3y - z = 3$$

○
$(x, y, z) = \left(\frac{11}{10}, \frac{3}{2}, -\frac{1}{5}\right)$

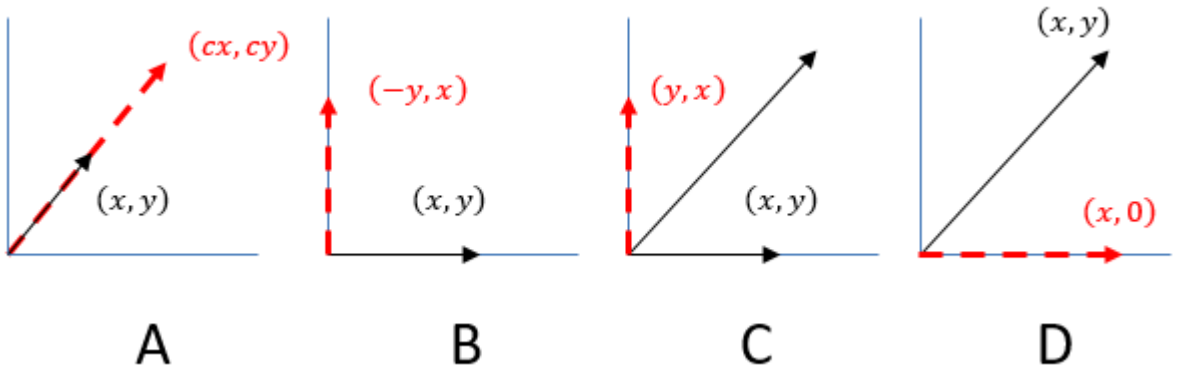
○
$(x, y, z) = \left(\frac{10}{11}, \frac{2}{3}, -\frac{2}{5}\right)$

◉
$(x, y, z) = \left(-\frac{1}{5}, \frac{3}{2}, \frac{11}{10}\right)$

○
$(x, y, z) = \left(\frac{3}{2}, -\frac{1}{5}, \frac{11}{10}\right)$

Question 18 1 pts

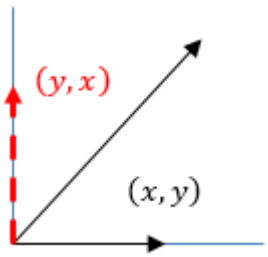
Which of the followings is stretching linear transformation?



- (●) A
- ( ) B
- ( ) C
- ( ) D

Question 19 1 pts

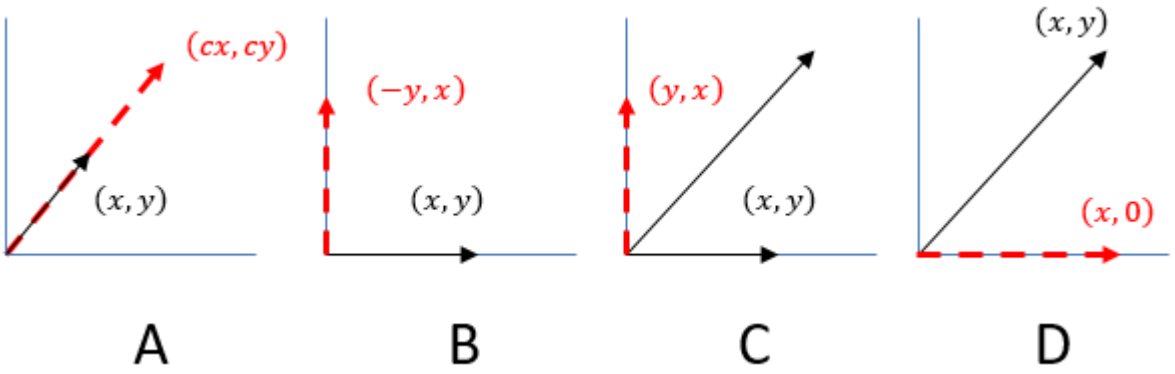
The following figure shows a reflection linear transformation. Which of the following transformation matrix should be used to perform this transformation?



- ( ) $A = \begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}$
- ( ) $A = \begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}$
- (●) $A = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$
- ( ) $A = \begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}$

Question 20 1 pts

Which of the followings is projection linear transformation?



- ○ A
- ○ B
- ○ C
- ◉ D

Saved at 14:36 Submit Quiz

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