Question **1**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&6&7&-7\\0&1&-4&-9\\0&0&0&0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%266%267%26-7%5C%5C0%261%26-4%26-9%5C%5C0%260%260%260%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Reduced echelon form

b. Echelon but not reduced

c. Neither

Feedback

The correct answer is: Echelon but not reduced

Question **2**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**The augmented matrix is given for a system of equations. If the system is consistent, find the general solution. Otherwise state that there is no solution.****[\left[\begin{array}{cc|c}1&-5&-4\\0&0&2\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7Cc%7D1%26-5%26-4%5C%5C0%260%262%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. x1 = -4 + 5x2  
x2 = 2  
x3 is free

b. x1 = -4 + 5x2  
x2 is free

c. (-4, 2)

d. No solution

Feedback

The correct answer is: No solution

Question **3**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**A homogeneous linear system of 100 equations in 90 unknowns:**

Select one:

a. is never inconsistent and may have a unique solution

b. is never inconsistent and will never have a unique solution.

c. has 10 parameters in the solution

d. can be inconsistent

Feedback

The correct answer is: is never inconsistent and may have a unique solution

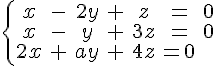
Question **4**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Find all values of a such that the homogeneous system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26-%262y%26%2B%26z%26%3D%260%5C%5Cx%26-%26y%26%2B%263z%26%3D%260%5C%5C2x%26%2B%26ay%26%2B%264z%26%3D0%5Cend%7Barray%7D%5Cright.)  
  
has only the trivial solution.**

Select one:

a. None of the other choices is correct

b. All numbers but 0

c. All number but -3

d. 0

e. -3

Feedback

The correct answer is: All number but -3

Question **5**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Determine all****[[s](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=s)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=s" \o "TeX)and****[[t](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=t)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=t" \o "TeX)such that the given matrix is symmetric:**

**[A= \left[ \begin{array}{ccc} 2 & ts & 4 \\ 0 & 0 & t+s \\ 4 & 4 & s \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D%202%20%26%20ts%20%26%204%20%5C%5C%200%20%26%200%20%26%20t%2Bs%20%5C%5C%204%20%26%204%20%26%20s%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)**

Select one:

a. t = 0, s = 0 or t = 4, s = 4

b. t = 0, s = 2

c. all of the other choices are false

d. t = 2, s = 0

e. t = 0, s = 4 or t = 4, s = 0

Feedback

The correct answer is: t = 0, s = 4 or t = 4, s = 0

Question **6**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find the second entry of the first row of the matrix A that satisfies****[A^{T}-\left[ \begin{array}{ccc} 1 & 0 & 0 \\ \end{array} \right]^{T}\left[ \begin{array}{cc} 0 & 1 \\ \end{array} \right]=\left[ \begin{array}{cc} 1 & 3 \\ 2 & 4 \\ 3 & 6 \\ \end{array} \right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7BT%7D-%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D%201%20%26%200%20%26%200%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%5E%7BT%7D%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%200%20%26%201%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%201%20%26%203%20%5C%5C%202%20%26%204%20%5C%5C%203%20%26%206%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%20)**

Select one:

a. 3

b. none of the other choices is true

c. 1

d. 4

e. 2

Feedback

The correct answer is: 2

Question **7**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Suppose that A and B are square matrices and that****[[C=\left[\begin{matrix}I&A \\ O & I \end{matrix} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%3D%5Cleft%5B%5Cbegin%7Bmatrix%7DI%26A%20%5C%5C%20O%20%26%20I%20%5Cend%7Bmatrix%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%3D%5Cleft%5B%5Cbegin%7Bmatrix%7DI%26A%20%5C%5C%20O%20%26%20I%20%5Cend%7Bmatrix%7D%20%5Cright%5D" \o "TeX)and****[[D=\left[\begin{matrix}I&B \\ O & I \end{matrix} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=D%3D%5Cleft%5B%5Cbegin%7Bmatrix%7DI%26B%20%5C%5C%20O%20%26%20I%20%5Cend%7Bmatrix%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=D%3D%5Cleft%5B%5Cbegin%7Bmatrix%7DI%26B%20%5C%5C%20O%20%26%20I%20%5Cend%7Bmatrix%7D%20%5Cright%5D" \o "TeX), here O is zero matrix and I is identity matrix.**

**Choose the correct statements:**

**(i)****[CD=\left[\begin{matrix}I&B+A \\ O & I \end{matrix} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=CD%3D%5Cleft%5B%5Cbegin%7Bmatrix%7DI%26B%2BA%20%5C%5C%20O%20%26%20I%20%5Cend%7Bmatrix%7D%20%5Cright%5D)**

**(ii) C and D commute**

Select one:

a. Both (i) and (ii)

b. (ii) only

c. (i) only

d. None of the other choices is correct

Feedback

The correct answer is: Both (i) and (ii)

Question **8**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Given****[[A = \left[ \begin{array}{cc}1&1 \\ 1&2 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%261%20%5C%5C%201%262%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%261%20%5C%5C%201%262%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX);****[[B = \left[ \begin{array}{cc}2&3 \\ 0&7 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D2%263%20%5C%5C%200%267%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D2%263%20%5C%5C%200%267%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Find (1,2)-entry of****[[(A.B)^{-1}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%28A.B%29%5E%7B-1%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%28A.B%29%5E%7B-1%7D" \o "TeX).**

Select one:

a. -5/7

b. none of the other choices is true

c. 2/7

d. 1/14

e. 5/7

Feedback

The correct answer is: -5/7

Question **9**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**(i) A square matrix with a row of zeros is not invertible.  
(ii) A square matrix with all numbers 1 on the main diagonal is invertible**

Select one:

a. (ii)

b. None of them

c. (i) and (ii)

d. (i)

Feedback

The correct answer is: (i)

Question **10**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[T:R^{2}\rightarrow R^{2}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%5Crightarrow%20R%5E%7B2%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%5Crightarrow%20R%5E%7B2%7D" \o "TeX)be reflection in the line****[[y=x](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=y%3Dx)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=y%3Dx" \o "TeX)followed by rotation through****[[\frac{\pi}{2}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cfrac%7B%5Cpi%7D%7B2%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cfrac%7B%5Cpi%7D%7B2%7D" \o "TeX). Find the matrix of****[[T](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T" \o "TeX).**

Select one:

a. [\left[ \begin{array}{cc} 1 & 0 \\ 0 & -1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%20%20%201%20%26%200%20%5C%5C%20%20%20%20%20%200%20%26%20-1%20%5C%5C%20%20%20%20%5Cend%7Barray%7D%20%20%5Cright%5D)

b. [\left[ \begin{array}{cc} 1 & -1 \\ 0 & 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%20%20%201%20%26%20-1%20%5C%5C%20%20%20%20%20%200%20%26%201%20%5C%5C%20%20%20%20%5Cend%7Barray%7D%20%20%5Cright%5D)

c. [\left[ \begin{array}{cc} -1 & 0 \\ 0 & 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%20%20%20-1%20%26%200%20%5C%5C%20%20%20%20%20%200%20%26%201%20%5C%5C%20%20%20%20%5Cend%7Barray%7D%20%20%5Cright%5D)

d. [\left[ \begin{array}{cc} 1 & 0 \\ -1 & 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%20%20%201%20%26%200%20%5C%5C%20%20%20%20%20%20-1%20%26%201%20%5C%5C%20%20%20%20%5Cend%7Barray%7D%20%20%5Cright%5D)

Feedback

The correct answer is: [\left[ \begin{array}{cc} -1 & 0 \\ 0 & 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%20%20%20-1%20%26%200%20%5C%5C%20%20%20%20%20%200%20%26%201%20%5C%5C%20%20%20%20%5Cend%7Barray%7D%20%20%5Cright%5D)

Question **11**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[\left|\begin{array}{ccc} a&b&c\\p&q&r\\x&y&z\end{array}\right|=8](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D8)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D8" \o "TeX). Find****[[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bcccc%7D3%262%264%265%5C%5Cx%260%26y%26z%5C%5Cp%260%26q%26r%5C%5Ca%260%26b%26c%20%5Cend%7Barray%7D%5Cright%7C)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bcccc%7D3%262%264%265%5C%5Cx%260%26y%26z%5C%5Cp%260%26q%26r%5C%5Ca%260%26b%26c%20%5Cend%7Barray%7D%5Cright%7C" \o "TeX).**

Select one:

a. -16

b. 8

c. none of the other choices is true

d. -8

e. 16

Feedback

The correct answer is: 16

Question **12**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A and B be n x n matrices, k a scalar. Choose INCORRECT statements:  
  
(i) det(A+B)=det(A)+det(B)  
  
(ii) det(kA)=kndet(A)  
  
(iii) det(A10) = [det(A)]10**

Select one:

a. (ii) and (iii)

b. None of the other choices is correct

c. (ii)

d. (i) and (iii)

e. (i)

Feedback

The correct answer is: (i)

Question **13**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[A=\begin{bmatrix}-6&-9&-8\\2&9&6\\0&1&-1\end{bmatrix}.](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cbegin%7Bbmatrix%7D-6%26-9%26-8%5C%5C2%269%266%5C%5C0%261%26-1%5Cend%7Bbmatrix%7D.)  
  
Find the first row of the matrix adj(A).**

Select one:

a. [-15 17 18]

b. None of the other choices is corrrect

c. [-15 2 2]

d. [-15 -2 2]

e. [-15 -17 18]

Feedback

The correct answer is: [-15 -17 18]

Question **14**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A and B be 3x3 matrices with det(A) = 5 and det(B) = 2. Find det(2BTA2B-1)**

Select one:

a. 400

b. 800

c. 200

d. 50

e. None of the other choices is correct

Feedback

The correct answer is: 200

Question **15**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**The eigenvalues of the matrix****[[\left[\begin{array}{cc}-5&6\\9&-8\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D-5%266%5C%5C9%26-8%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D-5%266%5C%5C9%26-8%5Cend%7Barray%7D%5Cright%5D" \o "TeX)are 1 and -14. Find a non-zero eigenvector associated with each eigenvalue.**

Select one:

a. [\left[\begin{array}{c}1\\1\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C1%5Cend%7Barray%7D%5Cright%5D%20)and [\left[\begin{array}{c}-2\\3\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D-2%5C%5C3%5Cend%7Barray%7D%5Cright%5D)

b. [\left[\begin{array}{c}-1\\1\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D-1%5C%5C1%5Cend%7Barray%7D%5Cright%5D%20)and [\left[\begin{array}{c}2\\3\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D2%5C%5C3%5Cend%7Barray%7D%5Cright%5D)

c. None of the other choices is correct

d. [\left[\begin{array}{c}1\\1\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C1%5Cend%7Barray%7D%5Cright%5D%20)and [\left[\begin{array}{c}2\\3\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D2%5C%5C3%5Cend%7Barray%7D%5Cright%5D)

e. [\left[\begin{array}{c}1\\-1\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C-1%5Cend%7Barray%7D%5Cright%5D%20)and [\left[\begin{array}{c}-2\\3\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D-2%5C%5C3%5Cend%7Barray%7D%5Cright%5D)

Feedback

The correct answer is: [\left[\begin{array}{c}1\\1\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C1%5Cend%7Barray%7D%5Cright%5D%20)and [\left[\begin{array}{c}-2\\3\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D-2%5C%5C3%5Cend%7Barray%7D%5Cright%5D)

Question **1**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&4&5&-7\\2&1&-4&5\\0&2&1&2\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%264%265%26-7%5C%5C2%261%26-4%265%5C%5C0%262%261%262%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Reduced echelon form

b. Echelon but not reduced

c. Neither

Feedback

The correct answer is: Neither

Question **2**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Solve the system of equations for****[[x_1](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_1)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_1" \o "TeX).  
  
x1 - x2 + x3 = 8  
x1 + x2 + x3 = 6  
x1 + x2 - x3 = -12**

Select one:

a. -2

b. 2

c. 9

d. -1

Feedback

The correct answer is: -2

Question **3**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**How many solutions would a homogeneous system of linear equations of 6 equations and in 3 variables have?**

Select one:

a. Only one solution

b. 3 solutions

c. There is not enough information

d. No solutions

e. Infinitely many solutions

Feedback

The correct answer is: There is not enough information

Question **4**

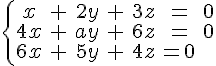
Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Find all values of a such that the system**

**[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%262y%26%2B%263z%26%3D%260%5C%5C4x%26%2B%26ay%26%2B%266z%26%3D%260%5C%5C6x%26%2B%265y%26%2B%264z%26%3D0%5Cend%7Barray%7D%5Cright.)**

**has only the trivial solution.**

Select one:

a. -3

b. All numbers but -3

c. None of the other choices is correct

d. All numbers but 5

e. 5

Feedback

The correct answer is: All numbers but 5

Question **5**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Determine all****[[s](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=s)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=s" \o "TeX)and****[[t](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=t)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=t" \o "TeX)such that the given matrix is symmetric:**

**[A= \left[ \begin{array}{ccc} 2 & t-s & 4 \\ 0 & 0 & t+s \\ 4 & 4 & s \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D%202%20%26%20t-s%20%26%204%20%5C%5C%200%20%26%200%20%26%20t%2Bs%20%5C%5C%204%20%26%204%20%26%20s%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)**

Select one:

a. all of the other choices are false

b. t = 0, s = 2

c. t = 2, s = 0

d. t = s = 2

Feedback

The correct answer is: t = s = 2

Question **6**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{matrix}1&2&4\\3&-1&0\\0&0&1\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D1%262%264%5C%5C3%26-1%260%5C%5C0%260%261%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D1%262%264%5C%5C3%26-1%260%5C%5C0%260%261%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX),****[[B=\left[\begin{matrix}2&7\\-1&4\\6&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D2%267%5C%5C-1%264%5C%5C6%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D2%267%5C%5C-1%264%5C%5C6%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX),****[[C=\left[\begin{matrix}-1&2\\3&0\\0&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D-1%262%5C%5C3%260%5C%5C0%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D-1%262%5C%5C3%260%5C%5C0%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX). Find (2,1)-entry of the matrix AB-ATC.**

Select one:

a. -5

b. 5

c. 12

d. 6

e. None of the other choices is correct

Feedback

The correct answer is: 12

Question **7**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Which of the followings are true of A and B if AB is a column vector?**

**(i) B is a column vector**

**(ii) A is a row vector**

**(iii) the number of rows in A must equal the number of columns in B.**

Select one:

a. (ii) and (iii) only

b. (i) and (iii) only

c. (i) only

d. None of the other choices is correct

e. (iii) only

Feedback

The correct answer is: (i) only

Question **8**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A1000 =****[[\left[ \begin{array}{cc}1&2 \\ 0&1 \end{matrix} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%262%20%5C%5C%200%261%20%5Cend%7Bmatrix%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%262%20%5C%5C%200%261%20%5Cend%7Bmatrix%7D%20%5Cright%5D" \o "TeX). Choose the correct statements:**

**(i) (A-1)1000 =****[\left[ \begin{array}{cc}1&-2\\ 0&1 \end{matrix} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%26-2%5C%5C%200%261%20%5Cend%7Bmatrix%7D%20%5Cright%5D)**

**(ii) (AT)1000 =****[\left[ \begin{array}{cc} 1&0\\ -2&1 \end{matrix} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%201%260%5C%5C%20-2%261%20%5Cend%7Bmatrix%7D%20%5Cright%5D)**

Select one:

a. None of the other choices is correct

b. (i) and (ii)

c. (ii) only

d. (i) only

Feedback

The correct answer is: (i) only

Question **9**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**If A and AB are invertible, which of the following  
statements are true?**

**(i) B is invertible**

**(ii) BA = AB**

Select one:

a. None of them

b. (i) and (ii)

c. (i)

d. (ii)

Feedback

The correct answer is: (i)

Question **10**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[T:R^{2}\rightarrow R^{2}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%5Crightarrow%20R%5E%7B2%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%5Crightarrow%20R%5E%7B2%7D" \o "TeX)be rotation through****[[\pi](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cpi)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cpi" \o "TeX)followed by reflection in the X axis. Find the matrix of****[[T](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T" \o "TeX).**

Select one:

a. none of the other choices is true

b. [\left[ \begin{array}{cc} 1 & 0 \\ 1 & -1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%20%20%201%20%26%200%20%5C%5C%20%20%20%20%20%201%20%26%20-1%20%5C%5C%20%20%20%20%5Cend%7Barray%7D%20%20%5Cright%5D)

c. [\left[ \begin{array}{cc} -1 & 0 \\ 0 & 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%20%20%20-1%20%26%200%20%5C%5C%20%20%20%20%20%200%20%26%201%20%5C%5C%20%20%20%20%5Cend%7Barray%7D%20%20%5Cright%5D)

d. [\left[ \begin{array}{cc} 1 & 0 \\ 0 & -1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%20%20%201%20%26%200%20%5C%5C%20%20%20%20%20%200%20%26%20-1%20%5C%5C%20%20%20%20%5Cend%7Barray%7D%20%20%5Cright%5D)

Feedback

The correct answer is: [\left[ \begin{array}{cc} -1 & 0 \\ 0 & 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%20%20%20-1%20%26%200%20%5C%5C%20%20%20%20%20%200%20%26%201%20%5C%5C%20%20%20%20%5Cend%7Barray%7D%20%20%5Cright%5D)

Question **11**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[\left|\begin{array}{ccc} a&b&c\\p&q&r\\x&y&z\end{array}\right|=-4](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D-4)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D-4" \o "TeX). Find****[[\left|\begin{array}{ccc} x-p&y-q&z-r\\2a-5x&2b-5y&2c-5z\\x&y&z\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20x-p%26y-q%26z-r%5C%5C2a-5x%262b-5y%262c-5z%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20x-p%26y-q%26z-r%5C%5C2a-5x%262b-5y%262c-5z%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C" \o "TeX).**

Select one:

a.

0

b. -8

c. 8

d. 40

e. None of the other choices is correct

Feedback

The correct answer is: -8

Question **12**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A be a 3 x 3 matrix. Choose correct statement:  
  
(i) det(-A) = -det(A)  
  
(ii) det(2A) = 2det(A)  
  
(iii) det(AT) = det(A)**

Select one:

a. (ii) and (iii)

b. None of the other choices is correct

c. (ii)

d. (iii)

e. (i) and (iii)

Feedback

The correct answer is: (i) and (iii)

Question **13**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{array}{ccc}1&1&1\\0&1&0\\1&0&x\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D" \o "TeX).  
  
Find the values of x so that A is NOT invertible.**

Select one:

a. All numbers but -1

b. None of the other choices is corrrect

c. All numbers but 1

d. -1

e. 1

Feedback

The correct answer is: 1

Question **14**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A, B be square matrices. Choose correct statements:  
  
(i) det(AB) = det(BA)  
  
(ii) If adj(A) exists, then A is invertible.**

Select one:

a. None of the other choices is correct

b. (ii)

c. (i) and (ii)

d. (i)

Feedback

The correct answer is: (i)

Question **15**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{array}{ccc}0&2&2\\2&0&2\\2&2&0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D0%262%262%5C%5C2%260%262%5C%5C2%262%260%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D0%262%262%5C%5C2%260%262%5C%5C2%262%260%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Given that****[[\lambda = -2](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda%20%3D%20-2)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda%20%3D%20-2" \o "TeX)is an eigenvalue of A. Which of the following are basic eigenvectors corresponding to****[[\lambda](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda" \o "TeX)?**

Select one:

a. [\left[\begin{array}{c}1\\0\\-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C0%5C%5C-1%5Cend%7Barray%7D%5Cright%5D)

b. None of the other choices is correct

c. [\left[\begin{array}{c}1\\0\\-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C0%5C%5C-1%5Cend%7Barray%7D%5Cright%5D)and [\left[\begin{array}{c}0\\1\\-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C1%5C%5C-1%5Cend%7Barray%7D%5Cright%5D)

d. [\left[\begin{array}{c}1\\1\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C1%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

e. [\left[\begin{array}{c}0\\1\\-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C1%5C%5C-1%5Cend%7Barray%7D%5Cright%5D)

Feedback

The correct answer is: [\left[\begin{array}{c}1\\0\\-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C0%5C%5C-1%5Cend%7Barray%7D%5Cright%5D)and [\left[\begin{array}{c}0\\1\\-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C1%5C%5C-1%5Cend%7Barray%7D%5Cright%5D)

Question **1**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&3&5&-7\\0&1&-4&1\\0&0&1&8\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%263%265%26-7%5C%5C0%261%26-4%261%5C%5C0%260%261%268%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Neither

b. Reduced echelon form

c. Echelon but not reduced

Feedback

The correct answer is: Echelon but not reduced

Question **2**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Solve the system of equations for****[[x_3](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_3)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_3" \o "TeX).  
  
x1 - x2 + 3x3 = -8  
2x1 + x3 = 0  
x1 + 5x2 + x3 = 40**

Select one:

a. 2

b. 0

c. 8

d. -8

Feedback

The correct answer is: 0

Question **3**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Choose correct statements:  
  
(i) If the system is not homogeneous, it has a non-trivial solution.  
  
(ii) If the sysem is homogeneous, it has a trivial solution.**

Select one:

a. (ii)

b. (i) and (ii)

c. None of the other choices is correct

d. (i)

Feedback

The correct answer is: (ii)

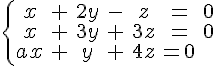
Question **4**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Find all values of a such that the homogeneous system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%262y%26-%26z%26%3D%260%5C%5Cx%26%2B%263y%26%2B%263z%26%3D%260%5C%5Cax%26%2B%26y%26%2B%264z%26%3D0%5Cend%7Barray%7D%5Cright.)  
  
has a**

Select one:

a. -2

b. None of the other choices is correct

c. All numbers but 2

d. 2

e. All numbers but -2

Feedback

The correct answer is: None of the other choices is correct

Question **5**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A, B be matrices of size 4 x 4. Choose the correct statements:  
  
(i) (A-2B)T= AT-2BT  
  
(ii) If the (2,3)-entry of A is 5 then the (3,2)-entry of AT is also 5  
  
(iii) (2A)T= 16(AT)**

Select one:

a. (i), (ii)

b. Only (ii)

c. (i), (iii)

d. Only (i)

e. None of the other choices is correct

Feedback

The correct answer is: (i), (ii)

Question **6**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[B=\left[\begin{matrix}2&7\\-1&4\\6&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D2%267%5C%5C-1%264%5C%5C6%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D2%267%5C%5C-1%264%5C%5C6%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX),****[[C=\left[\begin{matrix}-1&2\\3&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D-1%262%5C%5C3%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D-1%262%5C%5C3%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX). Find the sum of all entries in second column of the matrix BC.**

Select one:

a. 11

b. 21

c. 26

d. None of the other choices is correct

e. 14

Feedback

The correct answer is: 14

Question **7**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**How many of the followings are true about a product AB if A is 4x5 matrix?**

**(i) B must have four rows and the result will have fives columns.**

**(ii) B must have five columns and the result will be a square matrix.**

**(iii) B must have four columns and the result will have fives rows**

**(iv) B must have five rows adn the result will have four rows.**

Select one:

a. 2

b. 1

c. 3

d. 4

e. 0

Feedback

The correct answer is: 1

Question **8**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Find the first entry of the first row of the matrix A that satisfies**

**[(2A^T)^{-1}=\left[\begin{array}{cc}1&1\\1&-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%282A%5ET%29%5E%7B-1%7D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D1%261%5C%5C1%26-1%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. None of the other choices is correct

b. -1/4

c. 1/2

d. -1/2

e. 1/4

Feedback

The correct answer is: 1/4

Question **9**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A, B, C be matrices. Choose INCORRECT statements:  
  
(i) If AB=AC then B=C  
  
(ii) If A is invertible then (kA)-1=(1/k)A-1, where k is a nonzero number.  
  
(iii) If A2 is invertible then A is invertible**

Select one:

a. Only (iii)

b. (ii) and (iii)

c. Only (ii)

d. None of the other choices is correct

e. Only (i)

Feedback

The correct answer is: Only (i)

Question **10**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[T:R^{2}\rightarrow R^{2}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%5Crightarrow%20R%5E%7B2%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%5Crightarrow%20R%5E%7B2%7D" \o "TeX)be rotation through****[[\frac{\pi}{2}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cfrac%7B%5Cpi%7D%7B2%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cfrac%7B%5Cpi%7D%7B2%7D" \o "TeX)followed by reflection in the line****[[y=x](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=y%3Dx)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=y%3Dx" \o "TeX). Find the matrix of****[[T](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T" \o "TeX).**

Select one:

a. [\left[ \begin{array}{cc} -1 & 0 \\ 0 & 1 \\\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%20-1%20%26%200%20%5C%5C%20%20%20%200%20%26%201%20%5C%5C%5Cend%7Barray%7D%5Cright%5D)

b. [\left[ \begin{array}{cc} 1 & 0 \\ 0 & -1 \\\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%201%20%26%200%20%5C%5C%20%20%20%200%20%26%20-1%20%5C%5C%5Cend%7Barray%7D%5Cright%5D)

c. all of the other choices are false

d. [\left[ \begin{array}{cc} 1 & 1 \\ 0 & 1 \\\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%201%20%26%201%20%5C%5C%20%20%20%200%20%26%201%20%5C%5C%5Cend%7Barray%7D%5Cright%5D)

Feedback

The correct answer is: [\left[ \begin{array}{cc} 1 & 0 \\ 0 & -1 \\\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%20%5Cbegin%7Barray%7D%7Bcc%7D%20%20%20%201%20%26%200%20%5C%5C%20%20%20%200%20%26%20-1%20%5C%5C%5Cend%7Barray%7D%5Cright%5D)

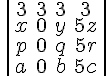
Question **11**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[\left|\begin{array}{ccc} a&b&c\\p&q&r\\x&y&z\end{array}\right|=4](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D4)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D4" \o "TeX). Find****[[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bcccc%7D3%263%263%263%5C%5Cx%260%26y%265z%5C%5Cp%260%26q%265r%5C%5Ca%260%26b%265c%20%5Cend%7Barray%7D%5Cright%7C)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bcccc%7D3%263%263%263%5C%5Cx%260%26y%265z%5C%5Cp%260%26q%265r%5C%5Ca%260%26b%265c%20%5Cend%7Barray%7D%5Cright%7C" \o "TeX).**

Select one:

a. 20

b. -20

c. -60

d. none of the other choices is true

e. 12

Feedback

The correct answer is: none of the other choices is true

Question **12**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A be a 5x5 matrix, det(A) = 1.**

**B is the matrix obtained from A by interchanging R3 and R5.**

**C is the matrix obtained from A by adding 12 times R3 to R5.**

**D is the matrix obtained from A by multiplying R3 by 5.**

**Find det(BCD).**

Select one:

a. -15

b. -60

c. -5

d. none of the other choices is true

Feedback

The correct answer is: -5

Question **13**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{array}{ccc}1&1&1\\0&1&0\\1&0&x\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D" \o "TeX).  
  
Assume that A is invertible. Find the (1, 1)-entry of A-1 .**

Select one:

a. x/(x-1)

b. -1/(x-1)

c. 1/(x-1)

d. -x/(x-1)

e. None of the other choices is corrrect

Feedback

The correct answer is: x/(x-1)

Question **14**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A be a 3 x 3 matrix with det(A)=2. Find det [A-1- adj(A)].  
  
Hint: Use A-1=[1/det(A)].adj(A).**

Select one:

a. None of the other choices is correct

b. 27/2

c. 3/8

d. 1/2

e. -1/2

Feedback

The correct answer is: -1/2

Question **15**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find the eigenvalues of the matrix****[\left[\begin{array}{ccc}1&1&-1\\0&0&-1\\0&2&-3\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%26-1%5C%5C0%260%26-1%5C%5C0%262%26-3%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. -1, -2, 1

b. 0, 0, 4

c. 2, 3, 7

d. 3, 5, 9

Feedback

The correct answer is: -1, -2, 1

Question **1**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&3&5&-7\\0&0&1&8\\0&1&-4&1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%263%265%26-7%5C%5C0%260%261%268%5C%5C0%261%26-4%261%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Echelon but not reduced

b. Neither

c. Reduced echelon form

Feedback

The correct answer is: Neither

Question **2**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**The augmented matrix is given for a system of equations. If the system is consistent, find the general solution. Otherwise state that there is no solution.****[\left[\begin{array}{cccc|c} 1&4&-2&-3&1\\0&0&1&3&5\\-1&-4&-2&-9&-21\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7Cc%7D%201%264%26-2%26-3%261%5C%5C0%260%261%263%265%5C%5C-1%26-4%26-2%26-9%26-21%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. x1 = 11 - 4x2 - 3x4  
x2 is free  
x3 = 5 - 3x4  
x4 is free

b. x1 = 11 - 4x2 - 3x3  
x2 = 5 - 3x3  
x3 is free

c. x1 = 11 - 4x2 - 3x4  
x2 is free  
x3 = 5 - 3x4  
x4 = 0

d. x1 = - 4x2 +2x3 + 3 x4 + 1  
x2 is free  
x3 = 5 - 3x4  
x4 is free

Feedback

The correct answer is: x1 = 11 - 4x2 - 3x4  
x2 is free  
x3 = 5 - 3x4  
x4 is free

Question **3**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**How many solutions would a system of linear equations of 3 equations and in 6 variables have?**

Select one:

a. No solutions

b. Infinitely many solutions

c. 3 solutions

d. There is not enough information

e. Only one solutions

Feedback

The correct answer is: There is not enough information

Question **4**

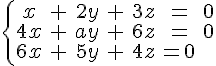
Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find all values of a such that the system**

**[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%262y%26%2B%263z%26%3D%260%5C%5C4x%26%2B%26ay%26%2B%266z%26%3D%260%5C%5C6x%26%2B%265y%26%2B%264z%26%3D0%5Cend%7Barray%7D%5Cright.)**

**has a non-trivial solution.**

Select one:

a. All numbers but 5

b. All numbers but -3

c. 5

d. None of the other choices is correct

e. -3

Feedback

The correct answer is: 5

Question **5**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A, B be matrices. Choose the correct statements:  
  
(i) (A-2B)T=2BT-AT  
  
(ii) If the (2,3)-entry of A is 5 then the (3,2)-entry of AT is -1/5  
  
(iii) (-A)T= -(AT)**

Select one:

a. None of the other choices is correct

b. Only (iii)

c. (i) and (ii)

d. Only (i)

e. Only (ii)

Feedback

The correct answer is: Only (iii)

Question **6**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**If two n****[[\times](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Ctimes)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Ctimes" \o "TeX)n matrices satisfy AT = B, BT = -B, then (ABA)T is:**

Select one:

a. [B^{T}B](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%5E%7BT%7DB)

b. [B^{T}BB^{T}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%5E%7BT%7DBB%5E%7BT%7D)

c. not defined

d. [B^{3}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%5E%7B3%7D)

e. [B^{T}B^{T}B](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%5E%7BT%7DB%5E%7BT%7DB)

f. [-B^{3}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=-B%5E%7B3%7D)

Feedback

The correct answer is: [-B^{3}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=-B%5E%7B3%7D)

Question **7**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Choose the correct statements:  
  
(i) If AB and BA can be formed then A and B must be square matrices.  
  
(ii) If A is 2 x 3, C is 6 x 7 then in order for ABC to be formed, B must be of size 6 x 3**

Select one:

a. (ii)

b. (i) and (ii)

c. (i)

d. None of the other choices is correct

Feedback

The correct answer is: None of the other choices is correct

Question **8**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Given****[[A = \left[ \begin{array}{cc}-1&0 \\ 2&1 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D-1%260%20%5C%5C%202%261%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D-1%260%20%5C%5C%202%261%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX);****[[B = \left[ \begin{array}{ccc}1&5&1 \\ 1&2&6 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D1%265%261%20%5C%5C%201%262%266%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D1%265%261%20%5C%5C%201%262%266%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Find (2,2)-entry of****[[A^{-1}.B}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7B-1%7D.B%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7B-1%7D.B%7D" \o "TeX).**

Select one:

a. -12

b. 10

c. -10

d. 12

Feedback

The correct answer is: 12

Question **9**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**If A and AB are invertible, which of the following  
statements are true?**

**(i) BA is invertible**

**(ii) B is a square matrix.**

Select one:

a. None of them

b. (i)

c. (i) and (ii)

d. (ii)

Feedback

The correct answer is: (i) and (ii)

Question **10**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**How many of the following functions are matrix transformation?  
(i) T(x,y) = (2x+3y; x-y)  
(ii) T(x,y) = (x+y, 1)  
(iii) T(x,y) = (x2+y, y)**

Select one:

a. 1

b. none of the other choices is true

c. 3

d. 0

e. 2

Feedback

The correct answer is: 1

Question **11**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[\left|\begin{array}{ccc} a&b&c\\p&q&r\\x&y&z\end{array}\right|=-4](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D-4)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D-4" \o "TeX). Find****[[\left|\begin{array}{ccc} p+x&q+y&r+z\\3a-x&3b-y&3c-z\\x&y&z\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20p%2Bx%26q%2By%26r%2Bz%5C%5C3a-x%263b-y%263c-z%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20p%2Bx%26q%2By%26r%2Bz%5C%5C3a-x%263b-y%263c-z%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C" \o "TeX).**

Select one:

a. 12

b. 4

c. -4

d. None of the other choices is correct

e. -12

Feedback

The correct answer is: 12

Question **12**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A be a 3 x 3 matrix. Let:  
  
B be the matrix obtained from A by Interchanging the first and the second row.  
  
C be the matrix obtained from B by dividing the third row by 4.  
  
D be the matrix obtained from C by interchanging the second and the third row.  
  
E be the matrix obtained from D by adding 5 times the second row to the third row.  
  
If det(E)=2, find det(A).**

Select one:

a. 1/2

b. -40

c. -8

d. None of the other choices is correct

e. 40

f. 8

g. -1/2

Feedback

The correct answer is: 8

Question **13**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{array}{ccc}1&0&1\\0&1&0\\-1&0&x\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%260%261%5C%5C0%261%260%5C%5C-1%260%26x%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%260%261%5C%5C0%261%260%5C%5C-1%260%26x%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Find the values of x so that A is invertible.**

Select one:

a. 0

b. 1

c. -1

d. All numbers but 1

e. All numbers but -1

f. All numbers but 0

Feedback

The correct answer is: All numbers but -1

Question **14**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A be a 3 x 3 matrix with det(A-1)=2. Find det [adj(A)].  
  
Hint: Use A-1=[1/det(A)].adj(A).**

Select one:

a. 1/8

b. 4

c. 8

d. None of the other choices is corrrect

e. 1/4

Feedback

The correct answer is: 1/4

Question **15**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find the eigenvalues of the matrix****[[\left[\begin{array}{cc}1&1\\4&-2\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D1%261%5C%5C4%26-2%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D1%261%5C%5C4%26-2%5Cend%7Barray%7D%5Cright%5D" \o "TeX).**

Select one:

a. 2; -3

b. -2

c. 3

d. None of the other choices is correct

e. -2; 3

Feedback

The correct answer is: 2; -3

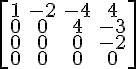
Question **1**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%26-2%26-4%264%5C%5C0%260%264%26-3%5C%5C0%260%260%26-2%5C%5C0%260%260%260%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Echelon but not reduced

b. Reduced echelon form

c. Neither

Feedback

The correct answer is: Neither

Question **2**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Solve the system of equations for****[[x_1](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_1)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_1" \o "TeX).  
  
x1 + 3x2 + 2x3 = 11  
4x2 + 9x3 = -12  
x3 = -4**

Select one:

a. -1

b. 1

c. -4

d. 6

Feedback

The correct answer is: 1

Question **3**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**How many solutions would a homogeneous system of linear equations of 3 equations and in 6 variables have?**

Select one:

a. 3 solutions

b. No solutions

c. There is not enough information

d. Only one solutions

e. Infinitely many solutions

Feedback

The correct answer is: Infinitely many solutions

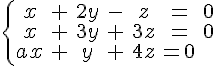
Question **4**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Find all values of a such that the homogeneous system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%262y%26-%26z%26%3D%260%5C%5Cx%26%2B%263y%26%2B%263z%26%3D%260%5C%5Cax%26%2B%26y%26%2B%264z%26%3D0%5Cend%7Barray%7D%5Cright.)  
  
has only the trivial solution.**

Select one:

a. 0

b. All numbers but -5

c. None of the other choices is correct

d. All numbers but 5

e. All numbers but 0

Feedback

The correct answer is: All numbers but 0

Question **5**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find the entries in the second row of matrix B if 3A-B = 2C, with**

**[A= \left[ \begin{array}{ccc} 1 & -1 & 1 \\ 0 & 0 & 3 \\ 4 & 2 & 0 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D%201%20%26%20-1%20%26%201%20%5C%5C%200%20%26%200%20%26%203%20%5C%5C%204%20%26%202%20%26%200%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D), and****[C = \left[ \begin{array}{ccc} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D%201%20%26%200%20%26%200%20%5C%5C%200%20%26%201%20%26%200%20%5C%5C%200%20%26%200%20%26%201%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)**

Select one:

a. 0, 2, -9

b. 3, -2, 6

c. 0, -2, 9

d. -3, 2, 6

Feedback

The correct answer is: 0, -2, 9

Question **6**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{matrix}0&1&1\\3&2&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D0%261%261%5C%5C3%262%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D0%261%261%5C%5C3%262%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX),****[[B=\left[\begin{matrix}2&7\\2&4\\6&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D2%267%5C%5C2%264%5C%5C6%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D2%267%5C%5C2%264%5C%5C6%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX). Find the second row of the matrix AB.**

Select one:

a. [8 4]

b. [4 29]

c. [10 8]

d. [10 29]

e. None of the other choices is correct

Feedback

The correct answer is: [10 29]

Question **7**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**If A is a square matrix, which of the following are true:**

**i) AAT is symmetric**

**ii) A2 is symmetric**

**iii) A+AT is symmetric**

Select one:

a. ii) and iii) only

b. i) and ii) only

c. all of them are true

d. i) and iii) only

Feedback

The correct answer is: i) and iii) only

Question **8**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Given****[[A = \left[ \begin{array}{cc}1&1 \\ 1&2 \\ 2&3 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%261%20%5C%5C%201%262%20%5C%5C%202%263%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%261%20%5C%5C%201%262%20%5C%5C%202%263%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX);****[[B = \left[ \begin{array}{cc}1&2 \\ 3&5 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%262%20%5C%5C%203%265%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%262%20%5C%5C%203%265%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Find (3,2)-entry of****[[A.B^{-1}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A.B%5E%7B-1%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A.B%5E%7B-1%7D" \o "TeX).**

Select one:

a. 3

b. 1

c. 0

d. 2

Feedback

The correct answer is: 1

Question **9**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Which of the following statements are true? (assume that all matrices are square matrices of the same size).  
  
(i) If A and B are invertible then AB-1 is also invertible and its inverse is BA-1  
  
(ii) If A and B are invertible then AB-1 is also invertible and its inverse is A-1B**

Select one:

a. (ii)

b. (i)

c. (i) and (ii)

d. None of them

Feedback

The correct answer is: (i)

Question **10**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[T:R^{2} \rightarrow R^{2} ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%20%5Crightarrow%20R%5E%7B2%7D%20)be rotation through****[[\pi](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cpi)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cpi" \o "TeX)followed by reflection in the X axis  . Then T is:**

Select one:

a. rotation through [\frac{-\pi}{2}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cfrac%7B-%5Cpi%7D%7B2%7D)

b. None of the other choices is true

c. Reflection in the Y axis

d. reflection in the X axis

Feedback

The correct answer is: Reflection in the Y axis

Question **11**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**If****[[\left|\begin{array}{ccc}a&b&c\\d&e&f\\g&h&i\end{array}\right|=7](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7Da%26b%26c%5C%5Cd%26e%26f%5C%5Cg%26h%26i%5Cend%7Barray%7D%5Cright%7C%3D7)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7Da%26b%26c%5C%5Cd%26e%26f%5C%5Cg%26h%26i%5Cend%7Barray%7D%5Cright%7C%3D7" \o "TeX), find****[\left|\begin{array}{ccc}3a-5g&g&d\\3b-5h&h&e\\3c-5i&i&f\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D3a-5g%26g%26d%5C%5C3b-5h%26h%26e%5C%5C3c-5i%26i%26f%5Cend%7Barray%7D%5Cright%7C)**

Select one:

a. 25

b. -21

c. 34

d. -15

Feedback

The correct answer is: -21

Question **12**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A be a 3 x 3 matrix and B a 4 x 4 matrix. If det A=3 and det B=2 , find det (2A) and det (3B) .**

Select one:

a. None of the other choices is correct

b. det (2A)= 24 and det (3B)=162

c. det (2A)= det (3B)=6

d. det (2A)= 48 and det (3B)=36

e. det (2A)= 162 and det (3B)=24

Feedback

The correct answer is: det (2A)= 24 and det (3B)=162

Question **13**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[A=\begin{bmatrix}-6&-9&-8\\2&9&6\\0&1&-1\end{bmatrix}.](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cbegin%7Bbmatrix%7D-6%26-9%26-8%5C%5C2%269%266%5C%5C0%261%26-1%5Cend%7Bbmatrix%7D.)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cbegin%7Bbmatrix%7D-6%26-9%26-8%5C%5C2%269%266%5C%5C0%261%26-1%5Cend%7Bbmatrix%7D." \o "TeX)Find the third row of the matrix adj(A).**

Select one:

a. [2 -6 -36]

b. [2 6 36]

c. None of the other choices is correct

d. [2 6 -36]

e. [18 20 -36]

Feedback

The correct answer is: [2 6 -36]

Question **14**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A, B be square matrices. Choose correct statements:  
  
(i) If A = 0, then adj(A) = 0  
  
(ii) If A is invertible, then adj(A) is invertible**

Select one:

a. (ii)

b. None of the other choices is correct

c. (i) and (ii)

d. (i)

Feedback

The correct answer is: (i) and (ii)

Question **15**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**The eigenvalues of the matrix****[[\left[\begin{array}{cc}1&3\\3&1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D1%263%5C%5C3%261%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D1%263%5C%5C3%261%5Cend%7Barray%7D%5Cright%5D" \o "TeX)are 4 and -2. Find a non-zero eigenvector associated with each eigenvalue.**

Select one:

a. [\left[\begin{array}{c}1\\-1\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C-1%5Cend%7Barray%7D%5Cright%5D%20)and [\left[\begin{array}{c}-2\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D-2%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

b. [\left[\begin{array}{c}1\\1\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C1%5Cend%7Barray%7D%5Cright%5D%20)and [\left[\begin{array}{c}2\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D2%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

c. None of the other choices is correct

d. [\left[\begin{array}{c}-1\\1\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D-1%5C%5C1%5Cend%7Barray%7D%5Cright%5D%20)and [\left[\begin{array}{c}0\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

e. [\left[\begin{array}{c}1\\1\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C1%5Cend%7Barray%7D%5Cright%5D%20)and [\left[\begin{array}{c}-1\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D-1%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

Feedback

The correct answer is: [\left[\begin{array}{c}1\\1\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C1%5Cend%7Barray%7D%5Cright%5D%20)and [\left[\begin{array}{c}-1\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D-1%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

Question **1**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&0&7&-7\\0&1&1&-9\\0&0&0&0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%260%267%26-7%5C%5C0%261%261%26-9%5C%5C0%260%260%260%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Reduced echelon form

b. Echelon but not reduced

c. Neither

Feedback

The correct answer is: Reduced echelon form

Question **2**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Solve the system of equations for****[[x_3](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_3)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_3" \o "TeX).  
  
5x1 + 2x2 + x3 = -11  
2x1 - 3x2 - x3 = 17  
7x1 + x2 + 2x3 = -4**

Select one:

a. -1

b. 4

c. 1

d. -4

Feedback

The correct answer is: 1

Question **3**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**For a homogeneous system of 4 equations in 5 unknowns, which of the following statements are true?**

**(i) The system can be inconsistent.**

**(ii) The system can have a unique solution.**

**(iii) The system can have infinitely many solutions.**

Select one:

a. (i) and (iii)

b. (iii)

c. (ii) and (iii)

d. (i)

Feedback

The correct answer is: (iii)

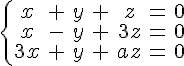
Question **4**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Find all values of a such that the homogeneous system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%26y%26%2B%26z%26%3D%260%5C%5Cx%26-%26y%26%2B%263z%26%3D%260%5C%5C3x%26%2B%26y%26%2B%26az%26%3D%260%5Cend%7Barray%7D%5Cright.)  
  
has a**

Select one:

a. 5

b. All numbers but -5

c. -5

d. All numbers but 5

e. None of the other choices is correct

Feedback

The correct answer is: 5

Question **5**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find the (2, 1)-entry of the matrix A that satisfies**

**[ \left(2A^{T}-5\left[ \begin{array}{cc} 1 & 0 \\ -1 & 2 \\ \end{array}\right]\right)^{T}=4A-9\left[ \begin{array}{cc} 1 & 1 \\ -1 & 0 \\ \end{array} \right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%20%5Cleft%282A%5E%7BT%7D-5%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%201%20%26%200%20%5C%5C%20-1%20%26%202%20%5C%5C%20%5Cend%7Barray%7D%5Cright%5D%5Cright%29%5E%7BT%7D%3D4A-9%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%201%20%26%201%20%5C%5C%20-1%20%26%200%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%20)**

Select one:

a. None of the other choices is true

b. -9/2

c. 7

d. 2

e. -5

Feedback

The correct answer is: -9/2

Question **6**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{matrix}1&2&4\\3&-1&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D1%262%264%5C%5C3%26-1%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D1%262%264%5C%5C3%26-1%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX),****[[B=\left[\begin{matrix}2&7\\-1&4\\6&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D2%267%5C%5C-1%264%5C%5C6%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D2%267%5C%5C-1%264%5C%5C6%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX),****[[C=\left[\begin{matrix}-1&2\\3&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D-1%262%5C%5C3%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D-1%262%5C%5C3%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX). Find (1,2)-entry of the matrix product ABC.**

Select one:

a. -45

b. 18

c. 27

d. 0

e. 48

Feedback

The correct answer is: 48

Question **7**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A, B and C be square matrices. Choose the correct statements.**

**(i) If AB = AC then B = C.**

**(ii) (AB)k = AkBk  for k in N**

Select one:

a. Both (i) and (ii)

b. None of the other choices is correct

c. (i)

d. (ii)

Feedback

The correct answer is: None of the other choices is correct

Question **8**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Find the second entry of the second row of the matrix A that satisfies:****[\left(\left[\begin{array}{cc}1&1\\1&0\end{array}\right]A\right)^{-1}=\left[\begin{array}{cc}1&2\\0&-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%28%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D1%261%5C%5C1%260%5Cend%7Barray%7D%5Cright%5DA%5Cright%29%5E%7B-1%7D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D1%262%5C%5C0%26-1%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. 1

b. None of the other choices is correct

c. 2

d. 0

e. 3

Feedback

The correct answer is: 3

Question **9**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A, B, C be matrices. Choose INCORRECT statements:  
  
(i) If AB=AC and A is invertible then B=C  
  
(ii) If A is invertible then (kA)-1=kA-1, where k is a nonzero number.  
  
(iii) If A is invertible then A2 is invertible**

Select one:

a. Only (ii) and (iii)

b. None of the other choices is correct

c. Only (ii)

d. Only (i)

e. Only (iii)

Feedback

The correct answer is: Only (ii)

Question **10**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[T:R^{2} \rightarrow R^{2} ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%20%5Crightarrow%20R%5E%7B2%7D%20)be reflection in y = x followed by rotation through****[[\frac{\pi}{2}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cfrac%7B%5Cpi%7D%7B2%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cfrac%7B%5Cpi%7D%7B2%7D" \o "TeX). Then T is:**

Select one:

a. rotation through [\frac{-\pi}{2}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cfrac%7B-%5Cpi%7D%7B2%7D)

b. reflection in the X axis

c. None of the other choices is true

d. Reflection in the Y axis

Feedback

The correct answer is: Reflection in the Y axis

Question **11**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**If****[[\left|\begin{array}{ccc}a&b&c\\d&e&f\\g&h&i\end{array}\right|=3](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7Da%26b%26c%5C%5Cd%26e%26f%5C%5Cg%26h%26i%5Cend%7Barray%7D%5Cright%7C%3D3)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7Da%26b%26c%5C%5Cd%26e%26f%5C%5Cg%26h%26i%5Cend%7Barray%7D%5Cright%7C%3D3" \o "TeX), find****[\left|\begin{array}{ccc}4g&a&d-2a\\4h&b&e-2b\\4i&c&f-2c\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D4g%26a%26d-2a%5C%5C4h%26b%26e-2b%5C%5C4i%26c%26f-2c%5Cend%7Barray%7D%5Cright%7C)**

Select one:

a. 24

b. 35

c. 12

d. 27

Feedback

The correct answer is: 12

Question **12**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A be a 3 x 3 matrix and B a 4 x 4 matrix. If det A=2 and det B=3 , find det (3A) and det (2B) .**

Select one:

a. [\det (3A)=6](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cdet%20%283A%29%3D6)and [\det (2B)=6](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cdet%20%282B%29%3D6)

b. [\det (3A)=48](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cdet%20%283A%29%3D48)and [\det (2B)=54](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cdet%20%282B%29%3D54)

c. None of the other choices is correct

d. [\det (3A)=54](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cdet%20%283A%29%3D54)and [\det (2B)=48](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cdet%20%282B%29%3D48)

Feedback

The correct answer is: [\det (3A)=54](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cdet%20%283A%29%3D54)and [\det (2B)=48](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cdet%20%282B%29%3D48)

Question **13**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{array}{ccc}1&0&1\\0&1&0\\-1&0&x\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%260%261%5C%5C0%261%260%5C%5C-1%260%26x%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%260%261%5C%5C0%261%260%5C%5C-1%260%26x%5Cend%7Barray%7D%5Cright%5D" \o "TeX).  
  
Find the values of x so that A is NOT invertible.**

Select one:

a. None of the other choices is corrrect

b. All numbers but 1

c. All numbers but -1

d. -1

e. 1

Feedback

The correct answer is: -1

Question **14**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let *A* and *B* be 2 x 2 matrices such that det(A) = -7 and det(B) = 4.  
Find det[3A-1 BT].**

Select one:

a. -12/7

b. 84

c. -84

d. -36/7

e. None of the other choices is corrrect

Feedback

The correct answer is: -36/7

Question **15**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Find the eigenvalues of the matrix****[\left[\begin{array}{ccc}-1&1&-1\\0&-5&6\\0&9&-8\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D-1%261%26-1%5C%5C0%26-5%266%5C%5C0%269%26-8%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. -1; 1; -14

b. None of the other choices is corrrect

c. -1; 1; 14

d. 1; 1; -14

e. -1; -1; 14

Feedback

The correct answer is: -1; 1; -14

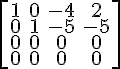
Question **1**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%260%26-4%262%5C%5C0%261%26-5%26-5%5C%5C0%260%260%260%5C%5C0%260%260%260%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Echelon but not reduced

b. Reduced echelon form

c. Neither

Feedback

The correct answer is: Reduced echelon form

Question **2**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Solve the system of equations for****[[x_3](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_3)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_3" \o "TeX).  
  
x1 + x2 + x3 = 7  
x1 - x2 + 2x3 = 7  
5x1 + x2 + x3 = 11**

Select one:

a. 1

b. 4

c. 2

d. 3

e. -2

Feedback

The correct answer is: 4

Question **3**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**For a system of 4 equations in 5 unknowns, which of the following statements are true?**

**(i) The system can be inconsistent.**

**(ii) The system can have a unique solution.**

**(iii) The system can have infinitely many solutions.**

Select one:

a. (i) and (iii)

b. (i)

c. (i), (ii) and (iii)

d. (iii)

Feedback

The correct answer is: (i) and (iii)

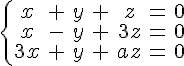
Question **4**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find all values of a such that the homogeneous system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%26y%26%2B%26z%26%3D%260%5C%5Cx%26-%26y%26%2B%263z%26%3D%260%5C%5C3x%26%2B%26y%26%2B%26az%26%3D%260%5Cend%7Barray%7D%5Cright.)  
  
has only trivial solution.**

Select one:

a. All numbers but -5

b. 5

c. -5

d. All numbers but 5

e. None of the other choices is correct

Feedback

The correct answer is: All numbers but 5

Question **5**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find the (1, 1)-entry of the matrix A that satisfies**

**[ \left(2A^{T}-5\left[ \begin{array}{cc} 1 & 0 \\ -1 & 2 \\ \end{array}\right]\right)^{T}=4A-9\left[ \begin{array}{cc} 1 & 1 \\ -1 & 0 \\ \end{array} \right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%20%5Cleft%282A%5E%7BT%7D-5%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%201%20%26%200%20%5C%5C%20-1%20%26%202%20%5C%5C%20%5Cend%7Barray%7D%5Cright%5D%5Cright%29%5E%7BT%7D%3D4A-9%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%201%20%26%201%20%5C%5C%20-1%20%26%200%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%20)**

Select one:

a. None of the other choices is true

b. -5

c. -9/2

d. 2

e. 7

Feedback

The correct answer is: 2

Question **6**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{array}{ccc} 1&2&1\\2&1&2\\1&2&3\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D%201%262%261%5C%5C2%261%262%5C%5C1%262%263%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D%201%262%261%5C%5C2%261%262%5C%5C1%262%263%5Cend%7Barray%7D%5Cright%5D" \o "TeX)and****[[B=\left[\begin{array}{ccc}4&1&1\\-4&2&0\\1&2&1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D4%261%261%5C%5C-4%262%260%5C%5C1%262%261%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D4%261%261%5C%5C-4%262%260%5C%5C1%262%261%5Cend%7Barray%7D%5Cright%5D" \o "TeX), find the (1,2)-entry of the matrix AB-BA.**

Select one:

a. 1

b. 0

c. -4

d. 1

e. 3

f. 2

Feedback

The correct answer is: -4

Question **7**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A and B be symmetric matrices. Which of the followings are true?**

**(i) 2A + B is symmetric**

**(ii) AB is symmetric**

**(iii) Ak is symmetric  (k is in N)**

Select one:

a. None of the other choices is correct

b. (i) and (iii) only

c. (i) only

d. (ii) and (iii) only

e. (ii) only

Feedback

The correct answer is: (i) and (iii) only

Question **8**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find (1,2)-entry of the matrix A such that****[(2A^{-1}+I)^{-1}= \left [ \begin{array}{cc} 3&4 \\ 5&7 \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%282A%5E%7B-1%7D%2BI%29%5E%7B-1%7D%3D%20%5Cleft%20%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%203%264%20%5C%5C%205%267%20%5Cend%7Barray%7D%20%5Cright%5D)**

Select one:

a. -1/2

b. -1

c. -5/4

d. -3/2

Feedback

The correct answer is: -1

Question **9**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A, B, X and C be square matrices. Given that A and B are invertibe and AXB = C. Which of the followings are true?**

**(i) X = A-1B-1C**

**(ii) X = CA-1B-1**

**(iii) X = A-1 CB-1**

Select one:

a. (i) only

b. None of the other choices is correct

c. (iii) only

d. (ii) only

e. (i), (ii) and (iii)

Feedback

The correct answer is: (iii) only

Question **10**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[T:R^{2} \rightarrow R^{2}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%20%5Crightarrow%20R%5E%7B2%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%20%5Crightarrow%20R%5E%7B2%7D" \o "TeX)be the matrix transformation induced by****[[A=\left[\begin{array}{cc} 1&1 \\ 0&1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D%201%261%20%5C%5C%200%261%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D%201%261%20%5C%5C%200%261%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D" \o "TeX). Find****[(T \circ T)\left[\begin{array}{c} 1 \\ 2 \\ \end{array} \right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%28T%20%5Ccirc%20T%29%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%20)**

Select one:

a. [\left[\begin{array}{c} 5 \\ 2 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%205%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)

b. [\left[\begin{array}{c} 0 \\- 2 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%200%20%5C%5C-%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)

c. [\left[\begin{array}{c} 7 \\ 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%207%20%5C%5C%201%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)

d. [\left[\begin{array}{c} 9 \\ 2 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%209%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)

e. none of the other choices is true

Feedback

The correct answer is: [\left[\begin{array}{c} 5 \\ 2 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%205%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)

Question **11**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[\left|\begin{array}{ccc} a&b&c\\p&q&r\\x&y&z\end{array}\right|=-4](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D-4)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D-4" \o "TeX). Find****[[\left|\begin{array}{ccc} p+x&q+y&r+z\\x-3a&y-3b&z-3c\\x&y&z\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20p%2Bx%26q%2By%26r%2Bz%5C%5Cx-3a%26y-3b%26z-3c%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20p%2Bx%26q%2By%26r%2Bz%5C%5Cx-3a%26y-3b%26z-3c%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C" \o "TeX).**

Select one:

a. -4

b. -12

c. 12

d. 4

e. None of the other choices is correct

Feedback

The correct answer is: -12

Question **12**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A be a square matrix. Choose correct statements:  
  
(i) det(-A) = -det(A)  
  
(ii) If A has two equal rows, then det(A) = 0  
  
(iii) If det(A) = 0, then A has two equal row.**

Select one:

a. (iii)

b. (i)

c. (i) and (ii)

d. (ii)

e. None of the other choices is correct

Feedback

The correct answer is: (ii)

Question **13**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{array}{ccc}1&1&1\\0&1&0\\1&0&x\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D" \o "TeX).  
  
Find the values of x so that A is invertible.**

Select one:

a. -1

b. 1

c. All numbers but 1

d. None of the other choices is corrrect

e. All numbers but -1

Feedback

The correct answer is: All numbers but 1

Question **14**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A be a 3 x 3 matrix with det(A)=2. Find det [adj(A)].  
  
Hint: Use A-1=[1/det(A)].adj(A).**

Select one:

a. 1/2

b. 4

c. 8

d. None of the other choices is correct

e. 2

Feedback

The correct answer is: 4

Question **15**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{array}{ccc}0&2&2\\2&0&2\\2&2&0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D0%262%262%5C%5C2%260%262%5C%5C2%262%260%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D0%262%262%5C%5C2%260%262%5C%5C2%262%260%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Given that****[[\lambda = 4](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda%20%3D%204)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda%20%3D%204" \o "TeX)is an eigenvalue of A. Which of the following are basic eigenvectors corresponding to****[[\lambda](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda" \o "TeX)?**

Select one:

a. [\left[\begin{array}{c}1\\-1\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C-1%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

b. [\left[\begin{array}{c}1\\1\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C1%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

c. [\left[\begin{array}{c}0\\1\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C1%5C%5C1%5Cend%7Barray%7D%5Cright%5D)and [\left[\begin{array}{c}1\\0\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C0%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

d. [\left[\begin{array}{c}1\\1\\-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C1%5C%5C-1%5Cend%7Barray%7D%5Cright%5D)

e. None of the other choices is correct

Feedback

The correct answer is: [\left[\begin{array}{c}1\\1\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C1%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

Question **1**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&4&0&-7\\0&1&0&5\\0&0&1&2\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%264%260%26-7%5C%5C0%261%260%265%5C%5C0%260%261%262%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Echelon but not reduced

b. Reduced echelon form

c. Neither

Feedback

The correct answer is: Echelon but not reduced

Question **2**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Solve the system of equations for****[[x_2](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_2)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=x_2" \o "TeX).  
  
x1 - x2 + 8x3 = -107  
6x1 + x3 = 17  
3x2 - 5x3 = 89**

Select one:

a. 0

b. 8

c. -8

d. 5

Feedback

The correct answer is: 8

Question **3**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**A linear system of 100 equations in 90 unknowns:**

Select one:

a. is never inconsistent and may have a unique solution

b. has 10 parameters in the solution

c. can be inconsistent

d. is never inconsistent and will never have a unique solution.

Feedback

The correct answer is: can be inconsistent

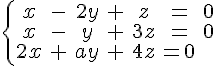
Question **4**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Find all values of a such that the homogeneous system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26-%262y%26%2B%26z%26%3D%260%5C%5Cx%26-%26y%26%2B%263z%26%3D%260%5C%5C2x%26%2B%26ay%26%2B%264z%26%3D0%5Cend%7Barray%7D%5Cright.)  
  
has a non-trivial solution.**

Select one:

a. -3

b. All number but -3

c. All numbers but 0

d. None of the other choices is correct

e. 0

Feedback

The correct answer is: -3

Question **5**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find the (1, 2) - entry of the matrix A that satisfies**

**[ \left(3A^T+\left[\begin{array}{cc}0&1\\-2&1\end{array}\right]\right)^T=\left[\begin{array}{cc}1&1\\2&3\end{array}\right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%20%5Cleft%283A%5ET%2B%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D0%261%5C%5C-2%261%5Cend%7Barray%7D%5Cright%5D%5Cright%29%5ET%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D1%261%5C%5C2%263%5Cend%7Barray%7D%5Cright%5D%20)**

Select one:

a. 1/3

b. None of the other choices is correct

c. 1

d. 2/3

e. -1

Feedback

The correct answer is: 1

Question **6**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[A = \left[\begin{matrix}1&2\\2&1\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%5Cbegin%7Bmatrix%7D1%262%5C%5C2%261%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%5Cbegin%7Bmatrix%7D1%262%5C%5C2%261%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX),****[[B = \left[\begin{matrix}1&0\\1&-2\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%5Cbegin%7Bmatrix%7D1%260%5C%5C1%26-2%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%5Cbegin%7Bmatrix%7D1%260%5C%5C1%26-2%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX). Find (1,2)-entry of matrix ABT-BA**

Select one:

a. -9

b. -4

c. -5

d. 0

e. None of the other choices is correct

Feedback

The correct answer is: -5

Question **7**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Choose the correct statements:  
  
(i) If A3 can be formed then A must be square matrix.  
  
(ii) If A commutes with A+B then A commutes with B**

Select one:

a. None of the other choices is correct

b. (i)

c. (i) and (ii)

d. (ii)

Feedback

The correct answer is: (i) and (ii)

Question **8**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Find the first entry of the second row of the matrix A that satisfies**

**[(I+A)^{-1}=\left[\begin{array}{cc} 1&2\\0&-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%28I%2BA%29%5E%7B-1%7D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D%201%262%5C%5C0%26-1%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. 2

b. 1

c. 0

d. -2

e. None of the other choices is correct

Feedback

The correct answer is: 0

Question **9**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**(assume that all matrices are square matrices of the same size).  
  
(i) If A2-A is invertible then A is also invertible  
  
(ii) If A is invertible then A2-A is also invertible**

Select one:

a. None of them

b. (i)

c. (ii)

d. (i) and (ii)

Feedback

The correct answer is: (i)

Question **10**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[T:R^{2} \rightarrow R^{2}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%20%5Crightarrow%20R%5E%7B2%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%20%5Crightarrow%20R%5E%7B2%7D" \o "TeX)be the matrix transformation induced by****[[A=\left[\begin{array}{cc} 1&1 \\ 0&1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D%201%261%20%5C%5C%200%261%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D%201%261%20%5C%5C%200%261%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D" \o "TeX). Find x, y such that****[T\left[\begin{array}{c} x \\ y \\ \end{array} \right] =\left[\begin{array}{c} 2 \\ 3 \\ \end{array} \right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%20x%20%5C%5C%20y%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%20%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%202%20%5C%5C%203%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%20)**

Select one:

a. all the other choices are false

b. x = 3; y = 1

c. x = 0; y = 4

d. x =-1; y = 3

e. x =1; y = 2

Feedback

The correct answer is: x =-1; y = 3

Question **11**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let****[[\left|\begin{array}{ccc} p&q&r\\a&b&c\\x&y&z\end{array}\right|=3](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20p%26q%26r%5C%5Ca%26b%26c%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D3)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20p%26q%26r%5C%5Ca%26b%26c%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D3" \o "TeX). Find****[[\left|\begin{array}{ccc} a&p&x\\c&r&z\\a+2b+3c&p+2q+3r&x+2y+3z\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26p%26x%5C%5Cc%26r%26z%5C%5Ca%2B2b%2B3c%26p%2B2q%2B3r%26x%2B2y%2B3z%5Cend%7Barray%7D%5Cright%7C)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26p%26x%5C%5Cc%26r%26z%5C%5Ca%2B2b%2B3c%26p%2B2q%2B3r%26x%2B2y%2B3z%5Cend%7Barray%7D%5Cright%7C" \o "TeX).**

Select one:

a. -18

b. -6

c. 6

d. none of the other choices is true

e. 18

Feedback

The correct answer is: 6

Question **12**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A be a 3x3 matrix, det(A) = 1.**

**B is the matrix obtained from A by interchanging R3 and R2.**

**C is the matrix obtained from B by adding 12 times R3 to R2.**

**D is the matrix obtained from C by multiplying R3 by 5.**

**Find det(D)**

Select one:

a. -10

b. none of the other choices is true

c. 5

d. -5

e. -15

Feedback

The correct answer is: -5

Question **13**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let****[[A=\left[\begin{array}{ccc}1&1&1\\0&1&0\\1&0&x\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D" \o "TeX).  
  
Assume that A is invertible. Find the (3, 2)-entry of A-1 .**

Select one:

a. -1/(x-1)

b. None of the other choices is corrrect

c. 1/(x-1)

d. x/(x-1)

e. -x/(x-1)

Feedback

The correct answer is: 1/(x-1)

Question **14**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

**Let A and B be 3x3 matrices with det(A) = 5 and det(B) = 8. Find det(4BTA2B-2)**

Select one:

a. 180

b. 210

c. None of the other choices is correct

d. 190

e. 200

Feedback

The correct answer is: 200

Question **15**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

**Let A be a 2 x 2 matrix with eigenvalues 2 and 3, and with corresponding eigenvectors [2 1]T and [1 1]T .  
  
Find the (1, 2)-entry of A.**

Select one:

a. None of the other choices is corrrect

b. -1

c. 4

d. 1

e. 2

Feedback

The correct answer is: 2

### Question 1

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&0&0&-7\\5&1&0&-3\\0&4&1&5\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%260%260%26-7%5C%5C5%261%260%26-3%5C%5C0%264%261%265%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Neither

b. Echelon but not reduced

c. Reduced echelon form

#### Feedback

The correct answer is: Neither

### Question 2

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**The augmented matrix is given for a system of equations. If the system is consistent, find the general solution. Otherwise state that there is no solution.****[\left[\begin{array}{ccc|c}1&2&-3&-19\\0&1&4&4\\0&0&0&1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7Cc%7D1%262%26-3%26-19%5C%5C0%261%264%264%5C%5C0%260%260%261%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. x1 = -27 + 11x3  
x2 = 4 - 4x3  
x3 is free

b. x1 = -19 - 2x2 + 3x3  
x2 is free  
x3 is free

c. No solution

d. x1 = -27 + 11x3  
x2 = 4 - 4x3  
x3 = 1

#### Feedback

The correct answer is: No solution

### Question 3

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Consider a system of linear equations with augmented matrix A. Choose correct statements:  
  
(i) If the echelon form of A has a row of zeros, the system has infinitely many solutions.  
  
(ii) If the system has infinitely many solutions, the echelon form of A has a row of zeros.**

Select one:

a. None of the other choices is correct

b. (i) and (ii)

c. (i)

d. (ii)

#### Feedback

The correct answer is: None of the other choices is correct

### Question 4

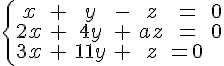
Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Find all values of a such that the system**

**[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%26y%26-%26z%26%3D%260%5C%5C2x%26%2B%264y%26%2B%26az%26%3D%260%5C%5C3x%26%2B%2611y%26%2B%26z%26%3D0%5Cend%7Barray%7D%5Cright.)**

**has a non-trivial solution.**

Select one:

a. 1

b. All numbers but 1

c. -1

d. None of the other choices is correct

e. All numbers but -1

#### Feedback

The correct answer is: -1

### Question 5

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Find the entries in the first row of matrix B if 3A-B = 2C, with**

**[A= \left[ \begin{array}{ccc} 1 & -1 & 1 \\ 0 & 0 & 3 \\ 4 & 2 & 0 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D%201%20%26%20-1%20%26%201%20%5C%5C%200%20%26%200%20%26%203%20%5C%5C%204%20%26%202%20%26%200%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D), and****[C = \left[ \begin{array}{ccc} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D%201%20%26%200%20%26%200%20%5C%5C%200%20%26%201%20%26%200%20%5C%5C%200%20%26%200%20%26%201%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)**

Select one:

a. 0, 2, -9

b. 1, -3, 3

c. -1, 3, 3

d. None of the other choices is correct

e. 0, -2, 9

#### Feedback

The correct answer is: 1, -3, 3

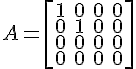
### Question 6

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Let****[[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D1%260%260%260%5C%5C0%261%260%260%5C%5C0%260%260%260%5C%5C0%260%260%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D1%260%260%260%5C%5C0%261%260%260%5C%5C0%260%260%260%5C%5C0%260%260%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX). Using block multiplication to find A100. Choose the correct answer.**

Select one:

a. O

b. 100A

c. A

d. None of the other choices is correct

#### Feedback

The correct answer is: A

### Question 7

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A, B be matrices. Choose correct statements:  
  
(i) If AB=0 then A=0 or B=0  
  
(ii) (A+B)(A-B)=A2-B2**

Select one:

a. (i) and (ii)

b. (ii)

c. (i)

d. None of the other choices is correct

#### Feedback

The correct answer is: None of the other choices is correct

### Question 8

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Given****[[A^{-1} = \left[ \begin{array}{cc}1&1 \\ 1&2 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7B-1%7D%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%261%20%5C%5C%201%262%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7B-1%7D%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%261%20%5C%5C%201%262%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX);****[[B = \left[ \begin{array}{cc}1&0 \\ 0&5 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%260%20%5C%5C%200%265%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%260%20%5C%5C%200%265%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Find the second row of the matrix *X* such that *A.X = B*.**

Select one:

a. [[1 \ \ \ 10]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5B1%20%5C%20%5C%20%5C%2010%5D)

b. [[5 \ \ \ 10]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5B5%20%5C%20%5C%20%5C%2010%5D)

c. [[2 \ \ \ 10]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5B2%20%5C%20%5C%20%5C%2010%5D)

d. [[1 \ \ \ 5]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5B1%20%5C%20%5C%20%5C%205%5D)

#### Feedback

The correct answer is: [[1 \ \ \ 10]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5B1%20%5C%20%5C%20%5C%2010%5D)

### Question 9

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Which of the following statements are true?  
  
(i) If A is invertible then A-1 is invertible  
(ii) If A is invertible then A2 is invertible.**

Select one:

a. (i)

b. (ii)

c. (i) and (ii)

d. None of them

#### Feedback

The correct answer is: (i) and (ii)

### Question 10

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[T:R^{2}\rightarrow R^{2} ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%5Crightarrow%20R%5E%7B2%7D%20)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%5Crightarrow%20R%5E%7B2%7D%20" \o "TeX)be a linear transformation, and  
assume that****[[T \left[\begin{array}{c} 1 \\ 0 \\ \end{array} \right]=\left[\begin{array}{c} 2 \\ 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%200%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%202%20%5C%5C%201%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%200%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%202%20%5C%5C%201%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D" \o "TeX)and****[[T \left[ \begin{array}{c} 1 \\ 1\\ \end{array} \right]=\left[\begin{array}{c} 1 \\ 2 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%201%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%201%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D" \o "TeX).  
Find****[[T\left[\begin{array}{c} 3 \\ 5 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%205%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%205%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D" \o "TeX).**

Select one:

a. [T \left[\begin{array}{c} 3 \\ 5 \\ \end{array} \right]=\left[\begin{array}{c} 1 \\ 8 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%205%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%208%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)

b. [T \left[\begin{array}{c} 3 \\ 5 \\ \end{array} \right]=\left[\begin{array}{c} 11 \\ -2 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%205%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%2011%20%5C%5C%20-2%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)

c. [T \left[\begin{array}{c} 3 \\ 5 \\ \end{array} \right]=\left[\begin{array}{c} -14 \\ 8 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%205%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%20-14%20%5C%5C%208%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)

d. [T \left[\begin{array}{c} 3 \\ 5 \\ \end{array} \right]=\left[\begin{array}{c} 1 \\ -42 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%205%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%20-42%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)

#### Feedback

The correct answer is: [T \left[\begin{array}{c} 3 \\ 5 \\ \end{array} \right]=\left[\begin{array}{c} 1 \\ 8 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%205%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%208%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)

### Question 11

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[\left|\begin{array}{ccc} a&b&c\\p&q&r\\x&y&z\end{array}\right|=-4](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D-4)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D-4" \o "TeX). Find****[[\left|\begin{array}{ccc} p-x&q-y&r-z\\2a-5x&2b-5y&2c-5z\\x&y&z\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20p-x%26q-y%26r-z%5C%5C2a-5x%262b-5y%262c-5z%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20p-x%26q-y%26r-z%5C%5C2a-5x%262b-5y%262c-5z%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C" \o "TeX).**

Select one:

a. None of the other choices is correct

b. 40

c. -40

d. -8

e. 8

#### Feedback

The correct answer is: 8

### Question 12

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A and B be n x n matrices, k a scalar. Choose INCORRECT statements:  
  
(i) det(AB)=det(A)det(B)  
  
(ii) det(kA)=kdet(A)  
  
(iii) det(AT)=det(A)**

Select one:

a. None of the other choices is corrrect

b. (i)

c. (i) and (iii)

d. (iii)

e. (ii)

#### Feedback

The correct answer is: (ii)

### Question 13

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[A=\left[\begin{array}{ccc}1&0&1\\0&1&0\\-1&0&x\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%260%261%5C%5C0%261%260%5C%5C-1%260%26x%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%260%261%5C%5C0%261%260%5C%5C-1%260%26x%5Cend%7Barray%7D%5Cright%5D" \o "TeX).  
  
Assume that A is invertible. Find the (1, 3)-entry of A-1.**

Select one:

a. x/(x+1)

b. -x/(x+1)

c. None of the other choices is correct

d. -1/(x+1)

e. 1/(x+1)

#### Feedback

The correct answer is: -1/(x+1)

### Question 14

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let *A* and *B* be 2 x 2 matrices such that det(A) = -7 and det(B) = 4. Find det[(AB)-1].**

Select one:

a. -1/28

b. -4/7

c. 1/28

d. None of the other choices is corrrect

e. -7/4

#### Feedback

The correct answer is: -1/28

### Question 15

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[A = \left[\begin{array}{ccc}1&1&-1\\0&0&-1\\0&2&-3\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%26-1%5C%5C0%260%26-1%5C%5C0%262%26-3%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%26-1%5C%5C0%260%26-1%5C%5C0%262%26-3%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Given that****[[\lambda = 1](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda%20%3D%201)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda%20%3D%201" \o "TeX)is an eigenvalue of A. Which of the following are basic eigenvectors corresponding to****[[\lambda](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda" \o "TeX)?**

Select one:

a. [\left[\begin{array}{c}1\\0\\0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C0%5C%5C0%5Cend%7Barray%7D%5Cright%5D)

b. [\left[\begin{array}{c}0\\0\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C0%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

c. [\left[\begin{array}{c}1\\0\\0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C0%5C%5C0%5Cend%7Barray%7D%5Cright%5D)and [\left[\begin{array}{c}0\\0\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C0%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

d. [\left[\begin{array}{c}1\\0\\0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C0%5C%5C0%5Cend%7Barray%7D%5Cright%5D)and [\left[\begin{array}{c}0\\1\\0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C1%5C%5C0%5Cend%7Barray%7D%5Cright%5D)

e. None of the other choices is correct

#### Feedback

The correct answer is: [\left[\begin{array}{c}1\\0\\0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D1%5C%5C0%5C%5C0%5Cend%7Barray%7D%5Cright%5D)

### Question 1

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&4&5&-7\\0&1&-4&8\\0&6&1&7\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%264%265%26-7%5C%5C0%261%26-4%268%5C%5C0%266%261%267%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Neither

b. Reduced echelon form

c. Echelon but not reduced

#### Feedback

The correct answer is: Neither

### Question 2

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**The augmented matrix is given for a system of equations. If the system is consistent, find the general solution. Otherwise state that there is no solution.****[\left[\begin{array}{ccc|c}1&0&6&5\\0&1&-2&-9\\0&0&0&0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7Cc%7D1%260%266%265%5C%5C0%261%26-2%26-9%5C%5C0%260%260%260%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. x1 = 5 - 6x3  
x2 is free  
x3 = (9/2)+ (1/2) x2

b. x1 = 5 - 6x3  
x2 = -9 + 2x3  
x3 = 0

c. No solution

d. x1 = 5 - 6x3  
x2 = -9 + 2x3  
x3 is free

#### Feedback

The correct answer is: x1 = 5 - 6x3  
x2 = -9 + 2x3  
x3 is free

### Question 3

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Choose correct statements:  
  
(i) If the sysem has a trivial solution, it must be homogeneous.  
  
(ii) If the system has a non-trivial solution, it cannot be homogeneous.**

Select one:

a. (i) and (ii)

b. None of the other choices is correct

c. (ii)

d. (i)

#### Feedback

The correct answer is: (i)

### Question 4

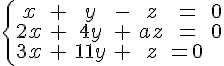
Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Find all values of a such that the system**

**[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%26y%26-%26z%26%3D%260%5C%5C2x%26%2B%264y%26%2B%26az%26%3D%260%5C%5C3x%26%2B%2611y%26%2B%26z%26%3D0%5Cend%7Barray%7D%5Cright.)**

**has only the trivial solution.**

Select one:

a. All numbers but 1

b. 1

c. All numbers but -1

d. None of the other choices is correct

e. -1

#### Feedback

The correct answer is: All numbers but -1

### Question 5

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Find the (1, 1) - entry of the matrix A that satisfies**

**[ \left(A^{T}+2\left[\begin{array}{cc}1 & 0 \\-1 & 2 \\\end{array}\right]\right)^{T}=3A+7I](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%20%5Cleft%28A%5E%7BT%7D%2B2%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D1%20%26%200%20%5C%5C-1%20%26%202%20%5C%5C%5Cend%7Barray%7D%5Cright%5D%5Cright%29%5E%7BT%7D%3D3A%2B7I)**

Select one:

a. -5

b. 0

c. None of the other choices is correct

d. -3

e. -2

#### Feedback

The correct answer is: None of the other choices is correct

### Question 6

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Find the matrix product AB for the partitioned matrices.****[A=\left[\begin{array}{cc}0&I\\I& F\end{array}\right], B=\left[\begin{array}{cc} W&X\\Y&Z\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D0%26I%5C%5CI%26%20F%5Cend%7Barray%7D%5Cright%5D%2C%20B%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D%20W%26X%5C%5CY%26Z%5Cend%7Barray%7D%5Cright%5D)**

**(I is the identity matrix)**

Select one:

a. [\left[\begin{array}{cc}Y&Z\\W+YF&X+ZF\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7DY%26Z%5C%5CW%2BYF%26X%2BZF%5Cend%7Barray%7D%5Cright%5D)

b. [\left[\begin{array}{cc}0&Z\\FY& FZ\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D0%26Z%5C%5CFY%26%20FZ%5Cend%7Barray%7D%5Cright%5D)

c. [\left[\begin{array}{cc}X&W+XF\\Z& Y+ZF\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7DX%26W%2BXF%5C%5CZ%26%20Y%2BZF%5Cend%7Barray%7D%5Cright%5D)

d. [\left[\begin{array}{cc}Y&Z\\ W+FY&X+FZ\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7DY%26Z%5C%5C%20W%2BFY%26X%2BFZ%5Cend%7Barray%7D%5Cright%5D)

#### Feedback

The correct answer is: [\left[\begin{array}{cc}Y&Z\\ W+FY&X+FZ\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7DY%26Z%5C%5C%20W%2BFY%26X%2BFZ%5Cend%7Barray%7D%5Cright%5D)

### Question 7

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A be 2x10 matrix and let B be 4x5 matrix. Choose the correct statements:**

**(i) ACB can be performed only if the size of C is 10x4.**

**(ii) If ACB can be performed then the size of result is 5x2.**

Select one:

a. Both (i) and (ii)

b. (i)

c. None of the other choices is correct

d. (ii)

#### Feedback

The correct answer is: (i)

### Question 8

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Given****[[A = \left[ \begin{array}{ccc}1&0&0 \\ 0&0&3 \\ 0&2&0 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D1%260%260%20%5C%5C%200%260%263%20%5C%5C%200%262%260%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D1%260%260%20%5C%5C%200%260%263%20%5C%5C%200%262%260%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Find the sum of (3,1)-entry and (2,3)-entry of A -1**

Select one:

a. 0

b. 1/2

c. 1/3

d. 1

e. none of the other choices is true

#### Feedback

The correct answer is: 1/2

### Question 9

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Let A be a square matrix that satisfies  
  
A3-3A+I=0  
  
Then...**

Select one:

a. A is invertible and [A^{-1}=A^2-3I](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7B-1%7D%3DA%5E2-3I)

b. A is invertible and [A^{-1}=3I-A^2](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7B-1%7D%3D3I-A%5E2)

c. A may not be invertible

d. None of the other choices is correct

e. A is invertible and [A^{-1}=3-A^2](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7B-1%7D%3D3-A%5E2)

#### Feedback

The correct answer is: A is invertible and [A^{-1}=3I-A^2](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7B-1%7D%3D3I-A%5E2)

### Question 10

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[: R^2\rightarrow R](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%3A%20R%5E2%5Crightarrow%20R)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%3A%20R%5E2%5Crightarrow%20R" \o "TeX)be a linear transformation and****[[u, v](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=u%2C%20v)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=u%2C%20v" \o "TeX)be vectors such that****[[T(u+v)=1](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%28u%2Bv%29%3D1)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%28u%2Bv%29%3D1" \o "TeX)and****[[T(u-v)=0](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%28u-v%29%3D0)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%28u-v%29%3D0" \o "TeX). Find****[[T(u+2v)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%28u%2B2v%29)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%28u%2B2v%29" \o "TeX).**

Select one:

a. 3/2

b. 3

c. 2

d. None of the other choices is correct

e. 2/3

#### Feedback

The correct answer is: 3/2

### Question 11

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Let****[[\left|\begin{array}{ccc} a&b&c\\p&q&r\\x&y&z\end{array}\right|=3](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D3)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D3" \o "TeX). Find****[[\left|\begin{array}{ccc} a&p&x\\c&r&z\\a+2b+3c&p+2q+3r&x+2y+3z\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26p%26x%5C%5Cc%26r%26z%5C%5Ca%2B2b%2B3c%26p%2B2q%2B3r%26x%2B2y%2B3z%5Cend%7Barray%7D%5Cright%7C)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26p%26x%5C%5Cc%26r%26z%5C%5Ca%2B2b%2B3c%26p%2B2q%2B3r%26x%2B2y%2B3z%5Cend%7Barray%7D%5Cright%7C" \o "TeX).**

Select one:

a. -6

b. 18

c. 6

d. none of the other choices is true

e. -18

#### Feedback

The correct answer is: -6

### Question 12

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A be a 3 x 3 matrix with det(A)=7. Let:  
  
B be the matrix obtained from A by interchanging the first and the second row.  
  
C be the matrix obtained from B by dividing the third row by 2.  
  
D be the matrix obtained from C by adding 5 times the second row to the third row.  
  
  
Find det(D).**

Select one:

a. 14

b. -14

c. -7/2

d. 7/2

e. None of the other choices is correct

#### Feedback

The correct answer is: -7/2

### Question 13

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[A=\left[\begin{array}{ccc}1&0&1\\0&1&0\\-1&0&x\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%260%261%5C%5C0%261%260%5C%5C-1%260%26x%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%260%261%5C%5C0%261%260%5C%5C-1%260%26x%5Cend%7Barray%7D%5Cright%5D" \o "TeX).  
  
Assume that A is invertible. Find the (1, 1)-entry of A-1.**

Select one:

a. 1/(x+1)

b. x/(x+1)

c. -x/(x+1)

d. -1/(x+1)

e. None of the other choices is correct

#### Feedback

The correct answer is: x/(x+1)

### Question 14

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Let A be a 3 x 3 matrix with det(A)=2. Find det [A-1+adj(A)].  
  
Hint: Use A-1=[1/det(A)].adj(A).**

Select one:

a. 27/8

b. 3/8

c. 3/2

d. None of the other choices is correct

e. 27/2

#### Feedback

The correct answer is: 27/2

### Question 15

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[A = \left[\begin{array}{ccc}1&1&-1\\0&0&-1\\0&2&-3\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%26-1%5C%5C0%260%26-1%5C%5C0%262%26-3%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%26-1%5C%5C0%260%26-1%5C%5C0%262%26-3%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Given that****[[\lambda = -1](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda%20%3D%20-1)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda%20%3D%20-1" \o "TeX)is an eigenvalue of A. Which of the following are basic eigenvectors corresponding to****[[\lambda](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Clambda" \o "TeX)?**

Select one:

a. None of the other choices is correct

b. [\left[\begin{array}{c}0\\0\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C0%5C%5C1%5Cend%7Barray%7D%5Cright%5D)and [\left[\begin{array}{c}0\\1\\-1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C1%5C%5C-1%5Cend%7Barray%7D%5Cright%5D)

c. [\left[\begin{array}{c}0\\-1\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C-1%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

d. [\left[\begin{array}{c}0\\1\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C1%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

e. [\left[\begin{array}{c}0\\0\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C0%5C%5C1%5Cend%7Barray%7D%5Cright%5D)and [\left[\begin{array}{c}0\\1\\0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C1%5C%5C0%5Cend%7Barray%7D%5Cright%5D)

#### Feedback

The correct answer is: [\left[\begin{array}{c}0\\1\\1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D0%5C%5C1%5C%5C1%5Cend%7Barray%7D%5Cright%5D)

### Question 1

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&3&5&-7\\0&1&-4&1\\0&0&1&8\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%263%265%26-7%5C%5C0%261%26-4%261%5C%5C0%260%261%268%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Echelon but not reduced

b. Neither

c. Reduced echelon form

#### Feedback

The correct answer is: Echelon but not reduced

### Question 2

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**If the augmented matrix****[[\left[ A\mid B \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20A%5Cmid%20B%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20A%5Cmid%20B%20%5Cright%5D" \o "TeX)of a system AX=B is row-equivalent to**

**[\left[\begin{array}{ccc|c} 1&5&0&6\\0&0&1&1\\0&0&0&0\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7Cc%7D%201%265%260%266%5C%5C0%260%261%261%5C%5C0%260%260%260%5Cend%7Barray%7D%5Cright%5D)**

**Which of the following statements is true**

Select one:

a. There are no solutions (the system is inconsistent).

b. X = (6, 1, 0) is a solution.

c. X = (-6, 6/5, 1) is a solution.

d. X = (6 - 5s, s, 1) is a solution for any value of s

e. X = (6s - 5, s, 1) is a solution for any value of s

f. X = (0, 0, 0) is a solution.

#### Feedback

The correct answer is: X = (6 - 5s, s, 1) is a solution for any value of s

### Question 3

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Consider a system of linear equations with augmented matrix A. Choose correct statements:  
  
(i) If the echelon form of A has a row of zeros, the system has infinitely many solutions.  
  
(ii) If the system has infinitely many solutions, the echelon form of A has a row of zeros.**

Select one:

a. None of the other choices is correct

b. (i) and (ii)

c. (i)

d. (ii)

#### Feedback

The correct answer is: None of the other choices is correct

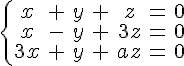
### Question 4

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Find all values of a such that the homogeneous system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%26y%26%2B%26z%26%3D%260%5C%5Cx%26-%26y%26%2B%263z%26%3D%260%5C%5C3x%26%2B%26y%26%2B%26az%26%3D%260%5Cend%7Barray%7D%5Cright.)  
  
has only trivial solution.**

Select one:

a. All numbers but -5

b. All numbers but 5

c. 5

d. None of the other choices is correct

e. -5

#### Feedback

The correct answer is: All numbers but 5

### Question 5

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Find the (1, 1)-entry of the matrix A that satisfies**

**[ \left(2A^{T}-5\left[ \begin{array}{cc} 1 & 0 \\ -1 & 2 \\ \end{array}\right]\right)^{T}=4A-9\left[ \begin{array}{cc} 1 & 1 \\ -1 & 0 \\ \end{array} \right] ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%20%5Cleft%282A%5E%7BT%7D-5%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%201%20%26%200%20%5C%5C%20-1%20%26%202%20%5C%5C%20%5Cend%7Barray%7D%5Cright%5D%5Cright%29%5E%7BT%7D%3D4A-9%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%201%20%26%201%20%5C%5C%20-1%20%26%200%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%20)**

Select one:

a. None of the other choices is true

b. 7

c. -5

d. -9/2

e. 2

#### Feedback

The correct answer is: 2

### Question 6

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[B=\left[\begin{matrix}2&7\\-1&4\\6&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D2%267%5C%5C-1%264%5C%5C6%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D2%267%5C%5C-1%264%5C%5C6%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX),****[[C=\left[\begin{matrix}-1&2\\3&0\end{matrix}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D-1%262%5C%5C3%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=C%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D-1%262%5C%5C3%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX). Find the sum of all entries in second column of the matrix BC.**

Select one:

a. None of the other choices is correct

b. 21

c. 14

d. 26

e. 11

#### Feedback

The correct answer is: 14

### Question 7

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Choose the correct statements:  
  
(i) If AB and BA can be formed then A and B must be square matrices.  
  
(ii) If A is 2 x 3, C is 6 x 7 then in order for ABC to be formed, B must be of size 6 x 3**

Select one:

a. (ii)

b. (i) and (ii)

c. (i)

d. None of the other choices is correct

#### Feedback

The correct answer is: None of the other choices is correct

### Question 8

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Given****[[A = \left[ \begin{array}{cc}-1&0 \\ 2&1 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D-1%260%20%5C%5C%202%261%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D-1%260%20%5C%5C%202%261%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX);****[[B = \left[ \begin{array}{ccc}1&5&1 \\ 1&2&6 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D1%265%261%20%5C%5C%201%262%266%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bccc%7D1%265%261%20%5C%5C%201%262%266%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Find (2,2)-entry of****[[A^{-1}.B}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7B-1%7D.B%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%5E%7B-1%7D.B%7D" \o "TeX).**

Select one:

a. 12

b. -10

c. -12

d. 10

#### Feedback

The correct answer is: 12

### Question 9

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Which of the following statements are true?**

**(i) If A2 = A then A is invertible  
  
(ii) if 7A is invertible then A is invertible.**

Select one:

a. (ii)

b. (i) and (ii)

c. (i)

d. None of them

#### Feedback

The correct answer is: (ii)

### Question 10

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let T:R2 ---> R2 be the linear transformation such that T(1,-1)=(0,1) and T(2,1)=(1,3). Find T(2,3).**

Select one:

a. (-5/3, 11/3)

b. None of them

c. (11/3, 5/3)

d. (5/3, -11/3)

e. (5/3, 11/3)

#### Feedback

The correct answer is: (5/3, 11/3)

### Question 11

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Let****[[\left|\begin{array}{ccc} a&b&c\\p&q&r\\x&y&z\end{array}\right|=3](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D3)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D3" \o "TeX). Find****[[\left|\begin{array}{ccc} a&p&x\\c&r&z\\a+2b+3c&p+2q+3r&x+2y+3z\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26p%26x%5C%5Cc%26r%26z%5C%5Ca%2B2b%2B3c%26p%2B2q%2B3r%26x%2B2y%2B3z%5Cend%7Barray%7D%5Cright%7C)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26p%26x%5C%5Cc%26r%26z%5C%5Ca%2B2b%2B3c%26p%2B2q%2B3r%26x%2B2y%2B3z%5Cend%7Barray%7D%5Cright%7C" \o "TeX).**

Select one:

a. -6

b. -18

c. 18

d. none of the other choices is true

e. 6

#### Feedback

The correct answer is: -6

### Question 12

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A be a 3 x 3 matrix. Let:  
  
B be the matrix obtained from A by Interchanging the first and the second row.  
  
C be the matrix obtained from B by dividing the third row by 4.  
  
D be the matrix obtained from C by interchanging the second and the third row.  
  
E be the matrix obtained from D by adding 5 times the second row to the third row.  
  
If det(E)=2, find det(A).**

Select one:

a. 40

b. -40

c. None of the other choices is correct

d. -8

e. -1/2

f. 8

g. 1/2

#### Feedback

The correct answer is: 8

### Question 13

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[A=\left[\begin{array}{ccc}1&1&1\\0&1&0\\1&0&x\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D" \o "TeX).  
  
Find the values of x so that A is NOT invertible.**

Select one:

a. 1

b. None of the other choices is corrrect

c. All numbers but -1

d. -1

e. All numbers but 1

#### Feedback

The correct answer is: 1

### Question 14

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A, B be square matrices. Choose correct statements:  
  
(i) If A = 0, then adj(A) = 0  
  
(ii) If A is invertible, then adj(A) is invertible**

Select one:

a. (i)

b. (ii)

c. None of the other choices is correct

d. (i) and (ii)

#### Feedback

The correct answer is: (i) and (ii)

### Question 15

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Let A be a 2 x 2 matrix with eigenvalues 2 and 5, and with corresponding eigenvectors [2 1]T and [3 2]T .  
  
Find the (1, 2)-entry of A.**

Select one:

a. 14

b. None of the other choices is correct

c. -7

d. -6

e. 18

#### Feedback

The correct answer is: 18

### Question 1

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&4&0&-7\\0&1&0&5\\0&0&1&2\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%264%260%26-7%5C%5C0%261%260%265%5C%5C0%260%261%262%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Echelon but not reduced

b. Reduced echelon form

c. Neither

#### Feedback

The correct answer is: Echelon but not reduced

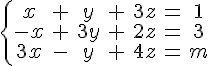
### Question 2

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Find all values of m so that the system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%26y%26%2B%263z%26%3D%261%5C%5C%20-x%26%2B%263y%26%2B%262z%26%3D%263%5C%5C%203x%26-%26y%26%2B%264z%26%3D%26m%5Cend%7Barray%7D%5Cright.)  
  
has only one solution.**

Select one:

a. m=1

b. all numbers but -1

c. m=-1

d. all numbers but 1

e. None of the other choices is correct

#### Feedback

The correct answer is: None of the other choices is correct

### Question 3

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**How many solutions would a system of linear equations of 3 equations and in 6 variables have?**

Select one:

a. No solutions

b. There is not enough information

c. 3 solutions

d. Only one solutions

e. Infinitely many solutions

#### Feedback

The correct answer is: There is not enough information

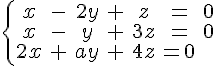
### Question 4

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Find all values of a such that the homogeneous system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26-%262y%26%2B%26z%26%3D%260%5C%5Cx%26-%26y%26%2B%263z%26%3D%260%5C%5C2x%26%2B%26ay%26%2B%264z%26%3D0%5Cend%7Barray%7D%5Cright.)  
  
has a non-trivial solution.**

Select one:

a. All number but -3

b. None of the other choices is correct

c. 0

d. All numbers but 0

e. -3

#### Feedback

The correct answer is: -3

### Question 5

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A, B be matrices of size 4 x 4. Choose the correct statements:  
  
(i) (A-2B)T= AT-2BT  
  
(ii) If the (2,3)-entry of A is 5 then the (3,2)-entry of AT is also 5  
  
(iii) (2A)T= 16(AT)**

Select one:

a. Only (ii)

b. Only (i)

c. (i), (ii)

d. None of the other choices is correct

e. (i), (iii)

#### Feedback

The correct answer is: (i), (ii)

### Question 6

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Find the matrix product AB for the partitioned matrices.****[A=\left[\begin{array}{cc}0&I\\I& F\end{array}\right], B=\left[\begin{array}{cc} W&X\\Y&Z\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D0%26I%5C%5CI%26%20F%5Cend%7Barray%7D%5Cright%5D%2C%20B%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D%20W%26X%5C%5CY%26Z%5Cend%7Barray%7D%5Cright%5D)**

**(I is the identity matrix)**

Select one:

a. [\left[\begin{array}{cc}0&Z\\FY& FZ\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D0%26Z%5C%5CFY%26%20FZ%5Cend%7Barray%7D%5Cright%5D)

b. [\left[\begin{array}{cc}Y&Z\\ W+FY&X+FZ\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7DY%26Z%5C%5C%20W%2BFY%26X%2BFZ%5Cend%7Barray%7D%5Cright%5D)

c. [\left[\begin{array}{cc}X&W+XF\\Z& Y+ZF\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7DX%26W%2BXF%5C%5CZ%26%20Y%2BZF%5Cend%7Barray%7D%5Cright%5D)

d. [\left[\begin{array}{cc}Y&Z\\W+YF&X+ZF\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7DY%26Z%5C%5CW%2BYF%26X%2BZF%5Cend%7Barray%7D%5Cright%5D)

#### Feedback

The correct answer is: [\left[\begin{array}{cc}Y&Z\\ W+FY&X+FZ\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7DY%26Z%5C%5C%20W%2BFY%26X%2BFZ%5Cend%7Barray%7D%5Cright%5D)

### Question 7

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**If A is a square matrix, which of the following are true:**

**i) AAT is symmetric**

**ii) A2 is symmetric**

**iii) A+AT is symmetric**

Select one:

a. i) and iii) only

b. ii) and iii) only

c. i) and ii) only

d. all of them are true

#### Feedback

The correct answer is: i) and iii) only

### Question 8

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Given****[[A = \left[ \begin{array}{cc}1&1 \\ 1&2 \\ 2&3 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%261%20%5C%5C%201%262%20%5C%5C%202%263%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%261%20%5C%5C%201%262%20%5C%5C%202%263%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX);****[[B = \left[ \begin{array}{cc}1&2 \\ 3&5 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%262%20%5C%5C%203%265%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%262%20%5C%5C%203%265%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Find (3,2)-entry of****[[A.B^{-1}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A.B%5E%7B-1%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A.B%5E%7B-1%7D" \o "TeX).**

Select one:

a. 3

b. 1

c. 0

d. 2

#### Feedback

The correct answer is: 1

### Question 9

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Which of the following statements are true?**

**(i) If A and B are invertible (A and B are of the same size) then A+B is invertible.**

**(ii) If the matrix A has row1+ row2 = row3 then A is not invertible**

Select one:

a. (ii)

b. (i)

c. (i) and (ii)

d. None of them

#### Feedback

The correct answer is: (ii)

### Question 10

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**which of the following functions are matrix transformation?  
(i) T(x,y) = (0, x-y)  
(ii)T(x,y) = (10x; 100y+1)  
(iii) T(x,y) = (x3; y2)**

Select one:

a. (i) and (ii) only

b. none of the other choices is true

c. (i) only

d. (ii) and (iii) only

e. (ii) only

#### Feedback

The correct answer is: (i) only

### Question 11

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[\left|\begin{array}{ccc} a&b&c\\p&q&r\\x&y&z\end{array}\right|=-4](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D-4)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20a%26b%26c%5C%5Cp%26q%26r%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C%3D-4" \o "TeX). Find****[[\left|\begin{array}{ccc} p-x&q-y&r-z\\2a-5x&2b-5y&2c-5z\\x&y&z\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20p-x%26q-y%26r-z%5C%5C2a-5x%262b-5y%262c-5z%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D%20p-x%26q-y%26r-z%5C%5C2a-5x%262b-5y%262c-5z%5C%5Cx%26y%26z%5Cend%7Barray%7D%5Cright%7C" \o "TeX).**

Select one:

a. -8

b. 40

c. None of the other choices is correct

d. 8

e. -40

#### Feedback

The correct answer is: 8

### Question 12

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A and B be n x n matrices, k a scalar. Choose INCORRECT statements:  
  
(i) det(AB)=det(A)det(B)  
  
(ii) det(kA)=kdet(A)  
  
(iii) det(AT)=det(A)**

Select one:

a. (i)

b. (iii)

c. (i) and (iii)

d. None of the other choices is corrrect

e. (ii)

#### Feedback

The correct answer is: (ii)

### Question 13

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[A=\left[\begin{array}{ccc}1&1&1\\0&1&0\\1&0&x\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%261%5C%5C0%261%260%5C%5C1%260%26x%5Cend%7Barray%7D%5Cright%5D" \o "TeX).  
  
Find the values of x so that A is invertible.**

Select one:

a. -1

b. All numbers but -1

c. All numbers but 1

d. None of the other choices is corrrect

e. 1

#### Feedback

The correct answer is: All numbers but 1

### Question 14

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let *A* and *B* be 2 x 2 matrices such that det(A) = -7 and det(B) = 4.  
Find det[3A-1 BT].**

Select one:

a. 84

b. -36/7

c. -12/7

d. None of the other choices is corrrect

e. -84

#### Feedback

The correct answer is: -36/7

### Question 15

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Find the eigenvalues of the matrix****[\left[\begin{array}{ccc}1&1&-1\\0&1&3\\0&3&1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bccc%7D1%261%26-1%5C%5C0%261%263%5C%5C0%263%261%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. 1; -4; 2

b. 1; 3; 3

c. 1; 4; 2

d. 1; 4; -2

e. None of the other choices is corrrect

#### Feedback

The correct answer is: 1; 4; -2

### Question 1

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Determine whether the matrix is in echelon form, reduced echelon form, or neither.****[\left[\begin{array}{cccc}1&3&5&-7\\0&0&1&8\\0&1&-4&1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcccc%7D1%263%265%26-7%5C%5C0%260%261%268%5C%5C0%261%26-4%261%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. Reduced echelon form

b. Echelon but not reduced

c. Neither

#### Feedback

The correct answer is: Neither

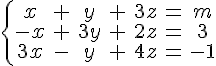
### Question 2

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Find all values of m so that the system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%26y%26%2B%263z%26%3D%26m%5C%5C%20-x%26%2B%263y%26%2B%262z%26%3D%263%5C%5C%203x%26-%26y%26%2B%264z%26%3D%26-1%5Cend%7Barray%7D%5Cright.)  
  
has no solution.**

Select one:

a. all numbers but 1

b. m=1

c. all numbers but -1

d. m = -1

e. None of the other choices is correct

#### Feedback

The correct answer is: all numbers but 1

### Question 3

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**A homogeneous linear system of 100 equations in 90 unknowns:**

Select one:

a. is never inconsistent and will never have a unique solution.

b. can be inconsistent

c. is never inconsistent and may have a unique solution

d. has 10 parameters in the solution

#### Feedback

The correct answer is: is never inconsistent and may have a unique solution

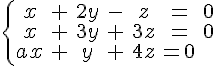
### Question 4

Complete

Mark 0.00 out of 1.00

Flag question

#### Question text

**Find all values of a such that the homogeneous system****[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5C%7B%5Cbegin%7Barray%7D%7Bccccccc%7D%20x%26%2B%262y%26-%26z%26%3D%260%5C%5Cx%26%2B%263y%26%2B%263z%26%3D%260%5C%5Cax%26%2B%26y%26%2B%264z%26%3D0%5Cend%7Barray%7D%5Cright.)  
  
has only the trivial solution.**

Select one:

a. None of the other choices is correct

b. 0

c. All numbers but -5

d. All numbers but 5

e. All numbers but 0

#### Feedback

The correct answer is: All numbers but 0

### Question 5

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A, B be matrices. Choose the correct statements:  
  
(i) (A-2B)T=2BT-AT  
  
(ii) If the (2,3)-entry of A is 5 then the (3,2)-entry of AT is -1/5  
  
(iii) (-A)T= -(AT)**

Select one:

a. (i) and (ii)

b. Only (iii)

c. Only (ii)

d. Only (i)

e. None of the other choices is correct

#### Feedback

The correct answer is: Only (iii)

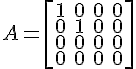
### Question 6

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D1%260%260%260%5C%5C0%261%260%260%5C%5C0%260%260%260%5C%5C0%260%260%260%5Cend%7Bmatrix%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cleft%5B%5Cbegin%7Bmatrix%7D1%260%260%260%5C%5C0%261%260%260%5C%5C0%260%260%260%5C%5C0%260%260%260%5Cend%7Bmatrix%7D%5Cright%5D" \o "TeX). Using block multiplication to find A100. Choose the correct answer.**

Select one:

a. None of the other choices is correct

b. 100A

c. A

d. O

#### Feedback

The correct answer is: A

### Question 7

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A, B be matrices. Choose correct statements:  
  
(i) If AB=0 then A=0 or B=0  
  
(ii) (A+B)(A-B)=A2-B2**

Select one:

a. (i) and (ii)

b. (ii)

c. (i)

d. None of the other choices is correct

#### Feedback

The correct answer is: None of the other choices is correct

### Question 8

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Given****[[A = \left[ \begin{array}{cc}1&1 \\ 1&2 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%261%20%5C%5C%201%262%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D1%261%20%5C%5C%201%262%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX);****[[B = \left[ \begin{array}{cc}2&3 \\ 0&7 \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D2%263%20%5C%5C%200%267%20%5Cend%7Barray%7D%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=B%20%3D%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D2%263%20%5C%5C%200%267%20%5Cend%7Barray%7D%5Cright%5D" \o "TeX). Find (1,2)-entry of****[[(A.B)^{-1}](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%28A.B%29%5E%7B-1%7D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%28A.B%29%5E%7B-1%7D" \o "TeX).**

Select one:

a. -5/7

b. 2/7

c. 1/14

d. 5/7

e. none of the other choices is true

#### Feedback

The correct answer is: -5/7

### Question 9

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Which of the following statements are true?  
  
(i) If A is invertible and you interchange its first two rows to reach B then B is also invertible  
  
(ii) If an invertible matrix A commutes with C then A-1commutes with C**

Select one:

a. (i)

b. None of them

c. (i) and (ii)

d. (ii)

#### Feedback

The correct answer is: (i) and (ii)

### Question 10

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[[T:R^{2}\rightarrow R^{2} ](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%5Crightarrow%20R%5E%7B2%7D%20)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%3AR%5E%7B2%7D%5Crightarrow%20R%5E%7B2%7D%20" \o "TeX)be a linear transformation, and  
assume that****[[T \left[\begin{array}{c} 3 \\ 2 \\ \end{array} \right]=\left[ \begin{array}{c} 7 \\ 2 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%207%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%207%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D" \o "TeX)and****[[T \left[ \begin{array}{c} -1 \\ 2 \\ \end{array} \right]=\left[ \begin{array}{c} 3 \\ 2 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%20-1%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%20%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%20-1%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D%3D%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D" \o "TeX).  
Find****[[T\left[\begin{array}{c} 1 \\ 1 \\ \end{array} \right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%201%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=T%5Cleft%5B%5Cbegin%7Barray%7D%7Bc%7D%201%20%5C%5C%201%20%5C%5C%20%5Cend%7Barray%7D%20%5Cright%5D" \o "TeX).**

Select one:

a. [\left[ \begin{array}{c} 3 \\ 1 \\ \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%201%20%5C%5C%20%5Cend%7Barray%7D%5Cright%5D)

b. none of the other choices is true

c. [\left[ \begin{array}{c} -4 \\ 0 \\ \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%20-4%20%5C%5C%20%200%20%5C%5C%20%5Cend%7Barray%7D%5Cright%5D)

d. [\left[ \begin{array}{cc} 4 \\ 2 \\ \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bcc%7D%204%20%5C%5C%202%20%5C%5C%20%5Cend%7Barray%7D%5Cright%5D)

#### Feedback

The correct answer is: [\left[ \begin{array}{c} 3 \\ 1 \\ \end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%20%5Cbegin%7Barray%7D%7Bc%7D%203%20%5C%5C%201%20%5C%5C%20%5Cend%7Barray%7D%5Cright%5D)

### Question 11

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**If****[[\left|\begin{array}{ccc}a&b&c\\d&e&f\\g&h&i\end{array}\right|=3](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7Da%26b%26c%5C%5Cd%26e%26f%5C%5Cg%26h%26i%5Cend%7Barray%7D%5Cright%7C%3D3)](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7Da%26b%26c%5C%5Cd%26e%26f%5C%5Cg%26h%26i%5Cend%7Barray%7D%5Cright%7C%3D3" \o "TeX), find****[\left|\begin{array}{ccc}4g&a&d-2a\\4h&b&e-2b\\4i&c&f-2c\end{array}\right|](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%7C%5Cbegin%7Barray%7D%7Bccc%7D4g%26a%26d-2a%5C%5C4h%26b%26e-2b%5C%5C4i%26c%26f-2c%5Cend%7Barray%7D%5Cright%7C)**

Select one:

a. 12

b. 27

c. 35

d. 24

#### Feedback

The correct answer is: 12

### Question 12

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A be a 3x3 matrix, det(A) = 1.**

**B is the matrix obtained from A by interchanging R3 and R2.**

**C is the matrix obtained from B by adding 12 times R3 to R2.**

**D is the matrix obtained from C by multiplying R3 by 5.**

**Find det(D)**

Select one:

a. -5

b. -10

c. 5

d. none of the other choices is true

e. -15

#### Feedback

The correct answer is: -5

### Question 13

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let****[A=\begin{bmatrix}-6&-9&-8\\2&9&6\\0&1&-1\end{bmatrix}.](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=A%3D%5Cbegin%7Bbmatrix%7D-6%26-9%26-8%5C%5C2%269%266%5C%5C0%261%26-1%5Cend%7Bbmatrix%7D.)  
  
Find the first row of the matrix adj(A).**

Select one:

a. None of the other choices is corrrect

b. [-15 -2 2]

c. [-15 2 2]

d. [-15 17 18]

e. [-15 -17 18]

#### Feedback

The correct answer is: [-15 -17 18]

### Question 14

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Let A be a 3 x 3 matrix with det(A)=2. Find det [A-1+adj(A)].  
  
Hint: Use A-1=[1/det(A)].adj(A).**

Select one:

a. 3/8

b. 27/8

c. None of the other choices is correct

d. 27/2

e. 3/2

#### Feedback

The correct answer is: 27/2

### Question 15

Complete

Mark 1.00 out of 1.00

Flag question

#### Question text

**Find eigenvalues of the matrix****[\left[\begin{array}{cc}1&3\\3&1\end{array}\right]](https://cmshn.fpt.edu.vn/filter/tex/displaytex.php?texexp=%5Cleft%5B%5Cbegin%7Barray%7D%7Bcc%7D1%263%5C%5C3%261%5Cend%7Barray%7D%5Cright%5D)**

Select one:

a. 4 and -2

b. -4 and 2

c. 4 and 2

d. None of the other choices is correct

e. -4 and -2

#### Feedback

The correct answer is: 4 and -2