1.(1 pt) You'll need to use formatted text mode in order to do this problem: click the "formatted text" button at the bottom of the page and then click "submit answer".

Given the augmented matrix A , perform each row operation in order, (a) followed by (b) followed by (c).

$$A = \left[\begin{array}{ccc|c} 1 & 1 & -6 & 5 \\ 2 & 3 & 1 & 5 \\ -3 & -7 & 6 & 2 \end{array}\right]$$

$(a) R_2 = -2r_1 + r_2$
$(b) R_3 = 3r_1 + r_3$
$(c) R_3 = 4r_2 + r_3$

$$\left[\begin{array}{ccc|c} \_ & \_ & \_ & \_ \\ \_ & \_ & \_ & \_ \\ \_ & \_ & \_ & \_ \end{array}\right]$$

2.(1 pt)
If A and B are 3×7 matrices, and C is a 8×3 matrix, which of the following are defined?

- A. $B + A$
- B. AC
- C. $B + C$
- D. A^T
- E. $B^T C^T$
- F. CB

3.(1 pt) You'll need to use formatted text mode in order to do these problems: (Click the "formatted text" radio button at the bottom of the page and then click "submit answer".)

If

$$A = \left[\begin{array}{ccc} 3 & -1 & -4 \\ 3 & -1 & 2 \\ 1 & -3 & 1 \end{array}\right] \quad \text{and} \quad B = \left[\begin{array}{ccc} 1 & 0 & -1 \\ 0 & 1 & 0 \\ 1 & -2 & -4 \end{array}\right]$$

Then

$$3A - B = \left[\begin{array}{ccc} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{array}\right]$$

4.(1 pt) You'll need to use formatted text mode in order to do these problems: (Click the "formatted text" radio button at the bottom of the page and then click "submit answer".)

If

$$A = \left(\begin{array}{ccc} 2 & 4 & -1 \\ 1 & 2 & 2 \\ -1 & -1 & 2 \end{array}\right) \qquad B = \left(\begin{array}{ccc} -2 & -3 & 2 \\ 4 & 2 & 2 \\ 0 & 1 & -4 \end{array}\right)$$

Then

$$2A + B = \left(\begin{array}{ccc} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{array}\right)$$

and

$$A^T = \left(\begin{array}{ccc} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{array}\right)$$

5.(1 pt) You'll need to use formatted text mode in order to do these problems: (Click the "formatted text" radio button at the bottom of the page and then click "submit answer".)

If

$$A = \left(\begin{array}{ccc} 1 & 2 & 0 \\ -4 & 4 & 4 \\ 2 & -2 & -3 \end{array}\right) \qquad B = \left(\begin{array}{ccc} 1 & -2 & 4 \\ -3 & 2 & 1 \\ -4 & 0 & 4 \end{array}\right)$$

Then

$$6A + B = \left(\begin{array}{ccc} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{array}\right)$$

and

$$3A^T = \left(\begin{array}{ccc} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{array}\right)$$

6.(1 pt) You'll need to use formatted text mode in order to do this problem: click the "formatted text" button at the bottom of the page and then click "submit answer".

If

$$A = \left[\begin{array}{cc} 3 & -3 \\ 4 & -6 \end{array}\right] \quad \text{and} \quad B = \left[\begin{array}{cc} -9 & -1 \\ 1 & 0 \end{array}\right]$$

then

$$AB = \left[\begin{array}{cc} \_ & \_ \\ \_ & \_ \end{array}\right]$$

7.(1 pt) You'll need to use formatted text mode in order to do this problem: click the "formatted text" button at the bottom of the page and then click "submit answer".

If

$$A = \left[\begin{array}{cc} -4 & -6 \\ 5 & 10 \\ -8 & 7 \end{array}\right] \quad \text{and} \quad B = \left[\begin{array}{c} -3 \\ 1 \end{array}\right]$$

then

$$AB = \left[\begin{array}{c} \_ \\ \_ \\ \_ \end{array}\right]$$

8.(1 pt) If

$$A = \left(\begin{array}{ccc} 0 & 4 & 4 \\ 2 & 2 & -1 \\ 0 & -2 & -4 \end{array}\right) \qquad B = \left(\begin{array}{ccc} -1 & 1 & 1 \\ -4 & 3 & 1 \\ 0 & 1 & 4 \end{array}\right)$$

Then

$$AB = \begin{pmatrix} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{pmatrix}$$

and

$$BA = \begin{pmatrix} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{pmatrix}$$

9.(1 pt) You'll need to use formatted text mode in order to do these problems: (Click the "formatted text" radio button at the bottom of the page and then click "submit answer".)

If

$$A = \begin{pmatrix} 2 & -4 & -1 \\ 3 & 2 & 4 \\ -3 & -3 & 4 \end{pmatrix} \qquad B = \begin{pmatrix} -3 & 0 & -4 \\ -2 & -4 & 3 \\ -1 & -3 & 1 \end{pmatrix}$$

Then

$$AB = \begin{pmatrix} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{pmatrix}$$

and

$$BA = \begin{pmatrix} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{pmatrix}$$

10.(1 pt) You'll need to use formatted text mode in order to do these problems: (Click the "formatted text" radio button at the bottom of the page and then click "submit answer".)

If

$$A = \begin{pmatrix} 1+3i & -2-3i \\ 3+4i & 4+i \end{pmatrix} \qquad B = \begin{pmatrix} -3-3i & -2+3i \\ -1-i & -1 \end{pmatrix}$$

Then

$$AB = \begin{pmatrix} \_ & \_ \\ \_ & \_ \end{pmatrix} \qquad BA = \begin{pmatrix} \_ & \_ \\ \_ & \_ \end{pmatrix}$$

11.(1 pt) You'll need to use formatted text mode in order to do this problem: click the "formatted text" button at the bottom of the page and then click "submit answer".

If

$$A = \begin{bmatrix} -3 & -1 & 1 \\ 0 & -2 & -1 \\ 6 & 8 & 2 \end{bmatrix}$$

then rank$A$ =_____ , and

$$A^2 = \begin{bmatrix} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{bmatrix}$$

12.(1 pt) You'll need to use formatted text mode in order to do this problem: click the "formatted text" button at the bottom of the page and then click "submit answer".

If

$$A = \begin{bmatrix} -1 & -8 \\ -8 & 5 \end{bmatrix}$$

then

$$A^{-1} = \begin{bmatrix} \_ & \_ \\ \_ & \_ \end{bmatrix}$$

13.(1 pt) You'll need to use formatted text mode in order to do this problem: click the "formatted text" button at the bottom of the page and then click "submit answer".

If

$$A = \begin{bmatrix} 0 & 0 & -1 \\ 0 & -1 & 3 \\ 1 & -3 & 10 \end{bmatrix}$$

then

$$A^{-1} = \begin{bmatrix} \_ & \_ & \_ \\ \_ & \_ & \_ \\ \_ & \_ & \_ \end{bmatrix}$$