

Matrix - Day 3 HW

Name: _____

Date: _____

1. Find the value of x in the matrix equation shown.

$$\begin{bmatrix} 5 & 9 & 1 & 0 \\ a & x & c & d \end{bmatrix} + \begin{bmatrix} 3 & 3 & 7 & 9 \end{bmatrix} =$$

- A. 8 B. 12 C. 3 D. 15

2. Fill in the blank with the value that makes the matrix equation true.

$$\begin{bmatrix} -1 & 2 \\ -3 & 6 \\ -3 & 4 \end{bmatrix} - \begin{bmatrix} -4 & -5 \\ -4 & 6 \\ 0 & 7 \end{bmatrix} - 3 \begin{bmatrix} -3 & 4 \\ -7 & 0 \\ 0 & -3 \end{bmatrix} = \begin{bmatrix} 12 & -5 \\ 22 & \square \\ -3 & 6 \end{bmatrix}$$

- A. -3 B. -1
C. 0 D. undefined

3. Fill in the blank with the value that makes the matrix equation true.

$$2 \begin{bmatrix} -6 & 4 & -8 \\ 6 & -1 & 1 \\ -18 & 2 & \square \end{bmatrix} - \begin{bmatrix} 6 & 6 & 4 \\ 5 & -2 & -6 \end{bmatrix} = \begin{bmatrix} -18 & 2 & \square \\ 7 & 0 & 8 \end{bmatrix}$$

- A. -25 B. -20
C. -18 D. undefined

4. For the following matrix equation, what must be the value of x ?

$$\begin{bmatrix} -2 & 3 & -2 \\ -3 & -4 & 3 \\ -3 & 1 & -5 \end{bmatrix} \begin{bmatrix} -4 & 1 \\ -3 & -5 \\ 2 & x \end{bmatrix} = \begin{bmatrix} -5 & -9 \\ 30 & 17 \\ -1 & 8 \end{bmatrix}$$

- A. -2 B. 2 C. 4 D. 5

5. What value should go in the square to make the matrix equation true?

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & -2 \\ -1 & 1 \\ -3 & 5 \end{bmatrix} = \begin{bmatrix} 1 & -2 \\ \square & 1 \\ -3 & 5 \end{bmatrix}$$

- A. -2 B. -1
C. 2 D. undefined

6. Given this matrix equation:

$$\begin{bmatrix} 2r \\ 7 \end{bmatrix} + \begin{bmatrix} 3s \\ -4r \end{bmatrix} = \begin{bmatrix} 16 \\ 5 \end{bmatrix}$$

What is the sum $r + s$?

- A. $-3\frac{1}{2}$ B. 1 C. $5\frac{1}{2}$ D. 10

7. Given this matrix equation:

$$\begin{bmatrix} j \\ k \end{bmatrix} + \begin{bmatrix} 2k \\ -5 \end{bmatrix} = \begin{bmatrix} 20 \\ 9 \end{bmatrix}$$

What is the sum $j + k$?

- A. -24 B. -21 C. 20 D. 34

8. What value for \square makes the matrix equation true?

$$\begin{bmatrix} -4 & 2 \\ 0 & 2 \end{bmatrix} - \begin{bmatrix} 3 & 0 & -1 \\ 4 & -7 & 3 \\ -2 & -5 & -8 \end{bmatrix} = \begin{bmatrix} -7 & 2 & 1 \\ -4 & \square & -3 \\ 2 & 5 & 8 \end{bmatrix}$$

- A. -2 B. 9
C. 10 D. undefined

9. If A is a 2×2 matrix and B is a 2×1 matrix, what is the dimension of AB ?

- A. 2×2 B. 2×1
C. 1×1 D. undefined

10. If A is a 2×2 matrix and B is a 2×1 matrix, what is the dimension of BA ?

- A. 2×2 B. 2×1
C. 1×1 D. undefined

11. Which of the following statements are true?

- I. A 2×3 matrix has two columns and three rows.
II. If A is a 3×4 matrix and B is a 3×4 matrix, then $A + B$ is defined.
III. If A and B have the same dimensions, then their difference, $A - B$, is obtained by subtracting corresponding entries.

- A. I only B. I and II only
C. III only D. II and III only

12. Given the matrices, find the value of BF .

$$B = \begin{bmatrix} -1 & 2 \\ 7 & 5 \end{bmatrix} \quad F = \begin{bmatrix} 0 & -6 \\ 0 & 5 \\ -3 & 9 \end{bmatrix}$$

- A. $\begin{bmatrix} -12 & 10 & 21 \\ -30 & 25 & 24 \end{bmatrix}$ B. $\begin{bmatrix} -62 & -47 \\ 63 & 45 \\ -19 & -19 \end{bmatrix}$
C. $\begin{bmatrix} 9 & -27 \\ -27 & 142 \end{bmatrix}$ D. not defined

13. Given the matrices, find the value of CB .

$$B = \begin{bmatrix} -1 & 2 \\ 7 & 5 \end{bmatrix} \quad C = \begin{bmatrix} -1 & -9 \\ 0 & 9 \\ -2 & -3 \end{bmatrix}$$

- A. $\begin{bmatrix} -2 & 2 \\ -6 & 2 \\ -9 & 6 \end{bmatrix}$ B. $\begin{bmatrix} -7 & -18 & -29 \\ -3 & 15 & 15 \end{bmatrix}$
C. $\begin{bmatrix} -62 & -47 \\ 63 & 45 \\ -19 & -19 \end{bmatrix}$ D. not defined

14. Given the matrices, find the value of GD .

$$D = \begin{bmatrix} -2 & -6 & -9 \\ 2 & 2 & 6 \end{bmatrix} \quad G = \begin{bmatrix} -2 & 2 \\ -6 & 2 \\ -9 & 6 \end{bmatrix}$$

A. $\begin{bmatrix} -12 & 10 & 21 \\ -30 & 25 & 24 \end{bmatrix}$ B. $\begin{bmatrix} -62 & -47 \\ 63 & 45 \\ -19 & -19 \end{bmatrix}$

C. $\begin{bmatrix} 8 & 16 & 30 \\ 16 & 40 & 66 \\ 30 & 66 & 117 \end{bmatrix}$ D. not defined

1.
Answer: B
Objective: N.VM.8
2.
Answer: C
Objective: N.VM.8
3.
Answer: B
Objective: N.VM.8
4.
Answer: A
5.
Answer: B
6.
Answer: C
7.
Answer: C
8.
Answer: D
9.
Answer: B
Objective: N.VM.8
10.
Answer: D
Objective: N.VM.8
11.
Answer: D
Objective: N.VM.8
12.
Answer: D
Objective: N.VM.8
13.
Answer: C
Objective: N.VM.8
14.
Answer: C
Objective: N.VM.8