



Matrices

Name _____

Date _____

Instructions: Attempt all questions.

Use the following matrices for Questions 1 to 8

$$A = \begin{pmatrix} 3 & 0 \\ -2 & 1 \end{pmatrix} \quad B = \begin{pmatrix} 4 & 8 \\ 3 & 5 \end{pmatrix} \quad \text{and} \quad C = \begin{pmatrix} 9 \\ -1 \end{pmatrix}$$

$$D = \begin{pmatrix} 3 & b \\ -4 & d \end{pmatrix}$$

1. $2A =$

- A. $\begin{pmatrix} 5 & 2 \\ -4 & 3 \end{pmatrix}$
- B. $\begin{pmatrix} 5 & 2 \\ -4 & 2 \end{pmatrix}$
- C. $\begin{pmatrix} 6 & 2 \\ -4 & 2 \end{pmatrix}$
- D. $\begin{pmatrix} 6 & 0 \\ -4 & 2 \end{pmatrix}$

2. What is the size of the matrix which is the product of A and C ?

- A. 2×2
- B. 1×2
- C. 2×1
- D. 1×1

3. $BC =$

- A. $\begin{pmatrix} 36 & -8 \\ 27 & -5 \end{pmatrix}$
- B. $\begin{pmatrix} 28 \\ 22 \end{pmatrix}$
- C. $\begin{pmatrix} 28 & 22 \end{pmatrix}$
- D. $\begin{pmatrix} 36 & 27 \\ -8 & -5 \end{pmatrix}$

4. The determinant of A is:

- A. 5 B. 3
- C. 1 D. 0

5. $2A^2 =$

- A. $\begin{pmatrix} 36 & 0 \\ 16 & 4 \end{pmatrix}$
- B. $\begin{pmatrix} 18 & 0 \\ 8 & 2 \end{pmatrix}$
- C. $\begin{pmatrix} -18 & 0 \\ -16 & 2 \end{pmatrix}$
- D. $\begin{pmatrix} 36 & 6 \\ -32 & 4 \end{pmatrix}$

6. $3B + 2A =$

- A. $\begin{pmatrix} 18 & 24 \\ -5 & 17 \end{pmatrix}$
- B. $\begin{pmatrix} 18 & 24 \\ 5 & 17 \end{pmatrix}$
- C. $\begin{pmatrix} 18 & 24 \\ -9 & 17 \end{pmatrix}$
- D. $\begin{pmatrix} 18 & 24 \\ -13 & 17 \end{pmatrix}$

7. $A^{-1} =$

- A. $\frac{1}{3} \begin{pmatrix} 1 & 0 \\ 2 & 3 \end{pmatrix}$
- B. $\frac{1}{3} \begin{pmatrix} 1 & 0 \\ -2 & 3 \end{pmatrix}$
- C. $\frac{1}{5} \begin{pmatrix} 1 & 0 \\ 2 & 3 \end{pmatrix}$
- D. $\frac{1}{5} \begin{pmatrix} 1 & 0 \\ -2 & 3 \end{pmatrix}$

8. If $DC = \begin{pmatrix} 22 \\ -8 \end{pmatrix}$, then $3b + d =$

- A. 43
- B. 13
- C. -13
- D. -43

Prepared By: Alton Felix