Algebra 2 Name_____ ID: 1

Matrix Test 2

Date_____ Period____

Solve each system of equations.

1) $8x + 9y = 29$
$4x - 2y = -18$

2) $-2x - 4y = -2$
$10x - 5y = 10$

3) $4x + y = -25$
$-6x + 10y = 26$

4) $-5x + y = 13$
$-2x - 3y = 29$

5) $-x + y = 5$
$2x + 11y = -10$

6) $-4x - 7y = 5$
$5x - 14y = -29$

Simplify. Write "undefined" for expressions that are undefined.

7) $-5\begin{bmatrix} -3 \\ -1 \\ 3 \end{bmatrix}$

8) $\begin{bmatrix} -1 \\ -1 \end{bmatrix} + \begin{bmatrix} 5 \\ 0 \end{bmatrix}$

9) $\begin{bmatrix} 1 & -2 \\ -5 & 1 \end{bmatrix} \cdot \begin{bmatrix} -6 \\ -3 \end{bmatrix}$

10) $\begin{bmatrix} -3 & -4 & 1 & 6 \end{bmatrix} - \begin{bmatrix} 2 & 6 & 5 & 6 \end{bmatrix}$

Solve each equation.

11) $\begin{bmatrix} -8 \\ 10 \end{bmatrix} = \begin{bmatrix} -8 & 2 \\ 7 & -1 \end{bmatrix} Z$

12) $\begin{bmatrix} -12 & 22 \end{bmatrix} = 2B$

13) $\begin{bmatrix} -4 \\ 10 \\ 20 \end{bmatrix} = 2X$

14) $\begin{bmatrix} -14 \\ 4 \end{bmatrix} = \begin{bmatrix} 1 & 1 \\ -6 & 2 \end{bmatrix} X$

15) $-3A = \begin{bmatrix} -24 & -21 \\ 9 & 0 \end{bmatrix}$

16) $\begin{bmatrix} -6 & 4 \\ -8 & 6 \end{bmatrix} C = \begin{bmatrix} -4 & -4 \\ 0 & -6 \end{bmatrix}$

Find the inverse of each matrix.

17) $\begin{bmatrix} -8 & -4 \\ 4 & 2 \end{bmatrix}$

18) $\begin{bmatrix} -9 & -9 \\ -3 & 2 \end{bmatrix}$

19) $\begin{bmatrix} 8 & -11 \\ -2 & 9 \end{bmatrix}$

20) $\begin{bmatrix} -3 & -3 \\ -8 & 1 \end{bmatrix}$

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1) $8x + 9y = 29$
$4x - 2y = -18$
$(-2, 5)$

2) $-2x - 4y = -2$
$10x - 5y = 10$
$(1, 0)$

3) $4x + y = -25$
$-6x + 10y = 26$
$(-6, -1)$

4) $-5x + y = 13$
$-2x - 3y = 29$
$(-4, -7)$

5) $-x + y = 5$
$2x + 11y = -10$
$(-5, 0)$

6) $-4x - 7y = 5$
$5x - 14y = -29$
$(-3, 1)$

Simplify. Write "undefined" for expressions that are undefined.

7) $-5\begin{bmatrix} -3 \\ -1 \\ 3 \end{bmatrix}$

$\begin{bmatrix} 15 \\ 5 \\ -15 \end{bmatrix}$

8) $\begin{bmatrix} -1 \\ -1 \end{bmatrix} + \begin{bmatrix} 5 \\ 0 \end{bmatrix}$

$\begin{bmatrix} 4 \\ -1 \end{bmatrix}$

9) $\begin{bmatrix} 1 & -2 \\ -5 & 1 \end{bmatrix} \cdot \begin{bmatrix} -6 \\ -3 \end{bmatrix}$

$\begin{bmatrix} 0 \\ 27 \end{bmatrix}$

10) $\begin{bmatrix} -3 & -4 & 1 & 6 \end{bmatrix} - \begin{bmatrix} 2 & 6 & 5 & 6 \end{bmatrix}$

$\begin{bmatrix} -5 & -10 & -4 & 0 \end{bmatrix}$

Solve each equation.

11) $\begin{bmatrix} -8 \\ 10 \end{bmatrix} = \begin{bmatrix} -8 & 2 \\ 7 & -1 \end{bmatrix} Z$

$\begin{bmatrix} 2 \\ 4 \end{bmatrix}$

12) $\begin{bmatrix} -12 & 22 \end{bmatrix} = 2B$

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$\begin{bmatrix} 8 & 7 \\ -3 & 0 \end{bmatrix}$

16) $\begin{bmatrix} -6 & 4 \\ -8 & 6 \end{bmatrix} C = \begin{bmatrix} -4 & -4 \\ 0 & -6 \end{bmatrix}$

$\begin{bmatrix} 6 & 0 \\ 8 & -1 \end{bmatrix}$

Find the inverse of each matrix.

17) $\begin{bmatrix} -8 & -4 \\ 4 & 2 \end{bmatrix}$

No inverse exists

18) $\begin{bmatrix} -9 & -9 \\ -3 & 2 \end{bmatrix}$

$\begin{bmatrix} -\frac{2}{45} & -\frac{1}{5} \\ -\frac{1}{15} & \frac{1}{5} \end{bmatrix}$

19) $\begin{bmatrix} 8 & -11 \\ -2 & 9 \end{bmatrix}$

$\begin{bmatrix} \frac{9}{50} & \frac{11}{50} \\ \frac{1}{25} & \frac{4}{25} \end{bmatrix}$

20) $\begin{bmatrix} -3 & -3 \\ -8 & 1 \end{bmatrix}$

$\begin{bmatrix} -\frac{1}{27} & -\frac{1}{9} \\ -\frac{8}{27} & \frac{1}{9} \end{bmatrix}$