

Algebra 2 Q1 HW6

All work on looseleaf.

Solve each system of equations using elimination by substitution.

$$\begin{aligned} 1. \quad & 2x + 4y = 2 \\ & 4x - 5y = 30 \end{aligned}$$

Solve each system of equations by using elimination by addition.

$$\begin{aligned} 2. \quad & 7a + 2b = 5 \\ & 7a - 5b = 12 \end{aligned}$$

For each system of inequalities, graph the feasible region, find the coordinates of each vertex, and find the maximum and minimum values of the $f(x,y)$ function.

$$\begin{aligned} 3. \quad & y \geq 2 \\ & x \leq 4 \\ & y \leq 2x - 4 \\ & f(x, y) = x + y \end{aligned}$$

Solve the given equation.

$$4. \quad \begin{bmatrix} x+y \\ y \end{bmatrix} = \begin{bmatrix} 18 \\ x-5 \end{bmatrix}$$

Perform the indicated matrix operation.

$$5. \quad \begin{bmatrix} 6 & 8 \\ -6 & -9 \end{bmatrix} + \frac{1}{2} \begin{bmatrix} 0 & 6 \\ -6 & -4 \end{bmatrix}$$

$$6. \quad 3 \begin{bmatrix} 2 & 4 \\ -1 & -8 \end{bmatrix} - 2 \begin{bmatrix} 0 & 8 \\ -6 & -6 \end{bmatrix}$$

Find the product, if possible. If not possible, explain why and write "undefined".

$$7. \quad \begin{bmatrix} 3 & 8 \\ -3 & 4 \end{bmatrix} \cdot \begin{bmatrix} 5 & 8 \\ 7 & -5 \end{bmatrix}$$

$$8. \quad \begin{bmatrix} 2 & 9 & 3 \\ -2 & 1 & -2 \end{bmatrix} \cdot \begin{bmatrix} 2 & 8 \\ 7 & -5 \end{bmatrix}$$

Name: _____

ID: A

Find the value of the determinant.

$$9. \begin{vmatrix} 5 & -2 \\ -1 & -3 \end{vmatrix}$$

$$10. \begin{vmatrix} 2 & -5 \\ -2 & -5 \end{vmatrix}$$

$$11. \begin{vmatrix} 2 & -2 \\ -1 & -5 \end{vmatrix}$$

$$12. \begin{vmatrix} 5 & 9 \\ -4 & 6 \end{vmatrix}$$

$$13. \begin{vmatrix} 3 & 8 \\ -2 & 7 \end{vmatrix}$$

Find the value of the determinant.

$$14. \begin{vmatrix} -1 & -5 & 1 \\ 2 & -1 & 3 \\ 3 & 3 & -2 \end{vmatrix}$$