Name:_____ Date:_____
PC: Cramer's Rule Ms. Loughran

Do Now:

1. Solve using an inverse matrix: $\begin{matrix} 4x-2y=10 \\ 3x-5y=11 \end{matrix}$

We can also use Cramer's rule to solve systems of linear equations.

Steps:

1. Set up a coefficient matrix.
2. Find the determinant of the coefficient matrix. If the determinant $\neq 0$ you can use Cramer's Rule.
3. To find *x* value, replace first column (*x* column) with the answer column and find determinant. Now divide this determinant by the original matrix's determinant, this quotient is your *x* value.
4. To solve for *y* value, replace second column (*y* column) with the answer column and find the determinant. Now divide this determinant by the original matrix's determinant, this quotient is your *y* value.

Let's go back to the Do Now and solve the system using Cramer's Rule.

Solve each of the following systems using Cramer's Rule, if possible.

2. $\begin{aligned} 5x + 4y &= 2 \\ -x + y &= -22 \end{aligned}$

3. $\begin{aligned} 2x - 5y &= 2 \\ 3x - 7y &= 1 \end{aligned}$

4. $\begin{aligned} -2x + 8y &= 1 \\ x - 4y &= 5 \end{aligned}$

Practice

Solve each of the following systems using Cramer's Rule, if possible.

1. $\begin{cases} 3x - 10y = 15 \\ 5x + 4y = 22 \end{cases}$

2. $\begin{cases} 2x + y = 0.3 \\ 3x - y = -1.3 \end{cases}$

3. $\begin{cases} x + y - z = 2 \\ 2x - y + z = -5 \\ x - 2y + 3z = 4 \end{cases}$

4. $\begin{cases} 2x - 3y + 4z = 10 \\ 6x - 9y + 12z = 24 \\ x + 2y - 3z = 5 \end{cases}$

Homework: Textbook p. 646 #s 13-16