Algebra 2
Review Ch. 3
Quiz 3.7-3.8 Wed.
Test Ch. 3 Thurs.
.
Graphing Calculators
OK to use, but you are on your own during test/quiz!

Example 8

Find XY if $X = \begin{bmatrix} 0 & -6 \\ 3 & 5 \end{bmatrix}$ and $Y = \begin{bmatrix} 8 \\ -1 \end{bmatrix}$.

$0 + 6$

$24 + 5$

$= \begin{bmatrix} 6 \\ 19 \end{bmatrix}$

2×2 $\quad$ 2×1

Example 6

Find $2A + 3B$ if $A = \begin{bmatrix} 9 & 1 \\ 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 4 \\ 3 & 7 \end{bmatrix}$.

$$\begin{bmatrix} 18 & 2 \\ 2 & 4 \end{bmatrix} + \begin{bmatrix} 3 & 12 \\ 9 & 21 \end{bmatrix} = \begin{bmatrix} 21 & 14 \\ 11 & 25 \end{bmatrix}$$

Example 9

Evaluate $\begin{vmatrix} 4 & -6 \\ 2 & 5 \end{vmatrix}$.

-12

$20 - (-12) = 32$

20

3-8 Solving Systems of Equations Using Inverse

Find the inverse of each matrix, if it exists.

43. $\begin{bmatrix} 7 & 4 \\ 3 & 2 \end{bmatrix}$

12

14

$\frac{1}{\det}\begin{bmatrix} \cdot & - \\ - & \cdot \end{bmatrix}$

$\frac{1}{2}\begin{bmatrix} 2 & -4 \\ -3 & 7 \end{bmatrix}$

Example 10

Use Cramer's Rule to solve $2a + 6b = -1$ and $a + 8b = 2$.

$$\begin{bmatrix} 2 & 6 \\ 1 & 8 \end{bmatrix} \begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} -1 \\ 2 \end{bmatrix}$$

16

$\left(-2, \frac{1}{2}\right)$

Use a matrix equation to solve:

$$a = \frac{\begin{vmatrix} -1 & 6 \\ 2 & 8 \end{vmatrix}}{-8+12} \qquad b = \frac{\begin{vmatrix} 2 & -1 \\ 1 & 2 \end{vmatrix}}{4+1}$$

-8 $\quad 4$

$\left(\frac{-20}{10}, \frac{5}{10}\right)$

Solve using inverse matrices GC ok to use but must show your setup

Example 11

Solve $\begin{bmatrix} 2 & -5 \\ 3 & -6 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 15 \\ 36 \end{bmatrix}$.

A B

$A^{-1} \cdot B$

Would technology be helpful?
Set up equations first.

30. AMUSEMENT PARKS Dustin, Luis, and Marci went to an amusement park. They purchased snacks from the same vendor. Their snacks and how much they paid are listed in the table. How much did each snack cost?

Name	Hot Dogs	Popcorn	Soda	Price
Dustin	1	2	3	$15.25
Luis	2	0	3	$14.00
Marci	1	2	1	$10.25

Example 1

Solve the system of equations by graphing.

- $x + y = 4$

  $x + 2y = 5$

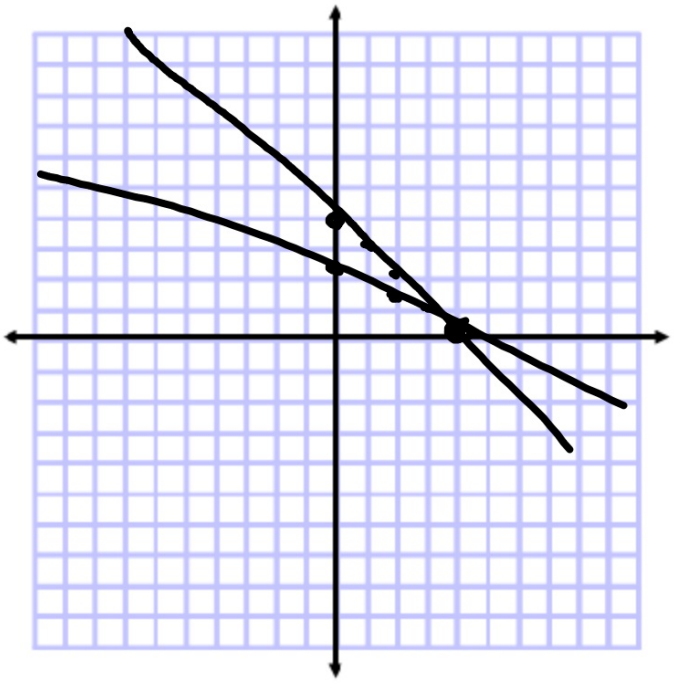
$y = -1x + 4$

$4 + 0 = 4$

$\frac{2y}{2} = \frac{-x}{2} + \frac{5}{2}$

$(4, 0)$

$y = \frac{-1}{2}x + \frac{5}{2}$



15. **LAWN CARE** André and Paul each mow lawns. André charges a $30 service fee and $10 per hour. Paul charges a $10 service fee and $15 per hour. After how many hours will André and Paul charge the same amount?

Example 2

Solve the system of equations by using either substitution or elimination.

$3x + 2y = 1$

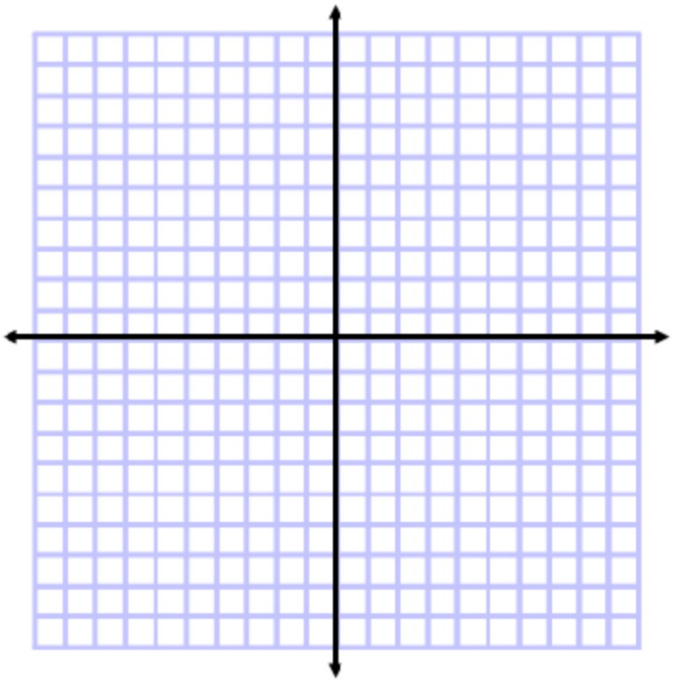
$y = -x + 1$

Example 3

Solve the system of inequalities by graphing.

$y \geq \frac{3}{2}x - 3$

$y < 4 - 2x$



any method: what are the choices?

Example 5

Solve the system of equations.

$$x + y + 2z = 6$$
$$2x + 5z = 12$$
$$x + 2y + 3z = 9$$