Algebra 2 Trigonometry Name_____

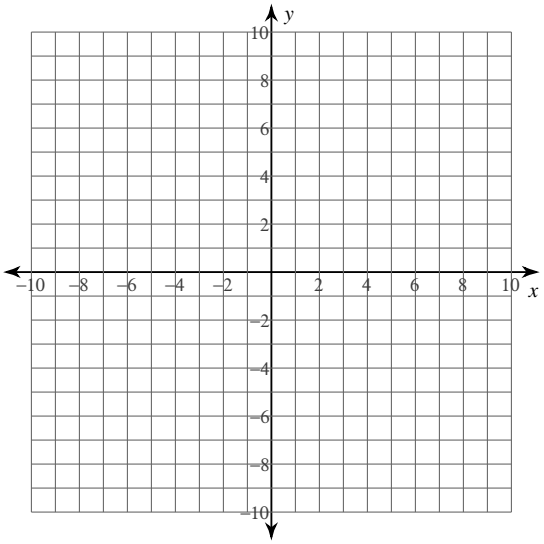
Ch 3 Review

Date_____ Period____

Solve each system by graphing.

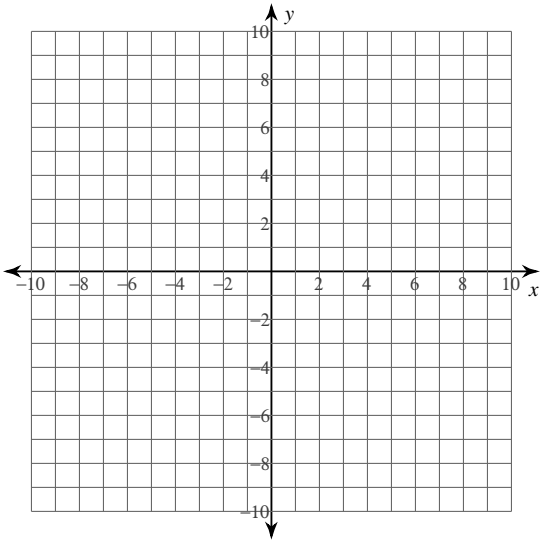
1) $y = -\frac{14}{5}x + 8$

$y = \frac{2}{5}x - 8$



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

$-x + 1 - y = 0$



Solve each system by substitution.

3) $5x + y = -9$
$10x + 2y = -18$

4) $-3x + y = 23$
$-x - 7y = 15$

Solve each system by elimination.

5) $-4x + y = 18$
$8x + 4y = 0$

6) $16x - 2y = 24$
$-40 - 10y = -80x$

7) $4a + 4b - 2c = -18$
$a + 6b - 3c = -7$
$-4a + 4b - c = 15$

8) $5x - 3y + 6z = -24$
$-3x - y - 5z = -8$
$2x - 5y + 5z = -22$

Use Cramer's Rule to solve each system.

9) $-x + y = 2$
$-5x + 2y + 3z = 3$
$x - y - 6z = 1$

Solve each system by using an augmented matrix.

10) $3r + 6s + 2t = 3$
$-6r - 3s - 2t = 9$
$r + 5s + t = 5$

Solve the following systems using three different methods.

11) Bill and Ryan each improved their yards by planting hostas and ornamental grass. They bought their supplies from the same store. Bill spent \$172 on 10 hostas and 14 bunches of ornamental grass. Ryan spent \$102 on 5 hostas and 9 bunches of ornamental grass. What is the cost of one hosta and the cost of one bunch of ornamental grass?

12) Matt and Castel each improved their yards by planting grass sod and ivy. They bought their supplies from the same store. Matt spent \$54 on 2 ft² of grass sod and 6 pots of ivy. Castel spent \$135 on 13 ft² of grass sod and 3 pots of ivy. What is the cost of one ft² of grass sod and the cost of one pot of ivy?

13) Huong and Elisa each improved their yards by planting rose bushes and ivy. They bought their supplies from the same store. Huong spent \$98 on 7 rose bushes and 7 pots of ivy. Elisa spent \$116 on 14 rose bushes and 4 pots of ivy. Find the cost of one rose bush and the cost of one pot of ivy.

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

14) $-5\begin{bmatrix} -1 & -2 \\ 5 & -1 \end{bmatrix}$

15) $\begin{bmatrix} 4 & -6 \end{bmatrix} - \begin{bmatrix} -2 & 6 \end{bmatrix}$

16) $-3 \cdot \left(\begin{bmatrix} -1 & 5 \\ -6 & 1 \\ 5 & 1 \end{bmatrix} \cdot \begin{bmatrix} -4 \\ -3 \end{bmatrix} \right)$

17) $4\begin{bmatrix} 2 & -2 & -3 \\ -1 & 3 & 3 \end{bmatrix} + \begin{bmatrix} -1 & -5 & 6 \\ 0 & 0 & -4 \end{bmatrix}$

18) $5\begin{bmatrix} -1 \\ 0 \end{bmatrix} - \begin{bmatrix} -6 \\ -2 \end{bmatrix}$

For each matrix state if an inverse exists.

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

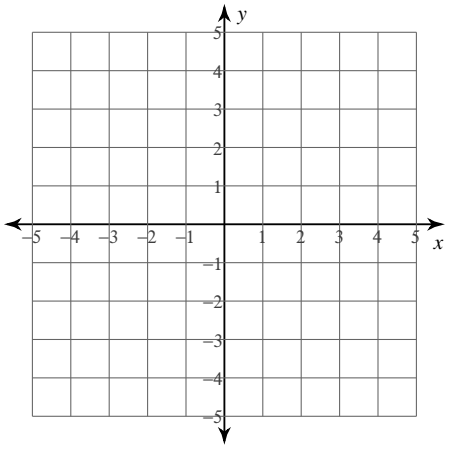
Find the inverse of each matrix.

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

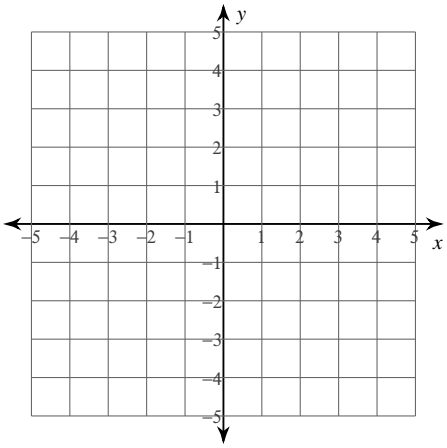
21) Use a determinant to find the area of a triangle if the vertices of the triangle are at A(-3, 10), B(4, 2) and C(0, -6).

Sketch the solution to each system of inequalities.

22) $y \leq -x + 2$
$y > 2x - 1$



23) $y < \frac{2}{3}x - 1$
$y > 2x + 3$



24) Determine whether the following are inverse matrices:

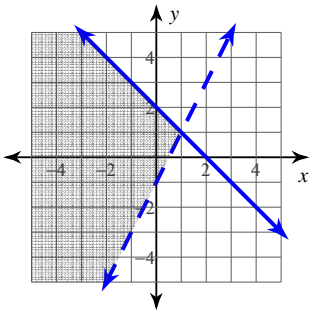
$\begin{bmatrix} 2 & 1 \\ 5 & 3 \end{bmatrix}$ and $\begin{bmatrix} 2 & 1 \\ 5 & 3 \end{bmatrix}$

25) Determine whether the following are inverse matrices:

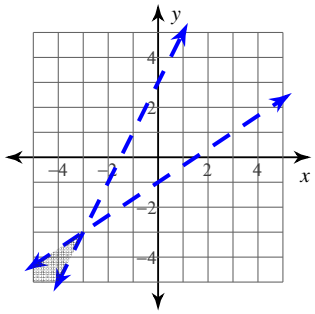
$\begin{bmatrix} 3 & -2 \\ -1 & 1 \end{bmatrix}$ and $\begin{bmatrix} 1 & 2 \\ 1 & 3 \end{bmatrix}$

Answers to Ch 3 Review (ID: 1)

1) $(5, -6)$
2) $(4, -3)$
3) Infinite number of solutions
4) $(-8, -1)$
5) $(-3, 6)$
6) No solution
7) $(-4, 0, 1)$
8) $(-6, 6, 4)$
9) $\left(-\frac{1}{6}, \frac{11}{6}, -\frac{1}{2}\right)$
10) $(-3, 1, 3)$
11) hosta: \$6, bunch of ornamental grass: \$8
12) ft² of grass sod: \$9, pot of ivy: \$6
13) rose bush: \$6, pot of ivy: \$8
14) $\begin{bmatrix} 5 & 10 \\ -25 & 5 \end{bmatrix}$
15) $\begin{bmatrix} 6 & -12 \end{bmatrix}$
16) $\begin{bmatrix} 33 \\ -63 \\ 69 \end{bmatrix}$
17) $\begin{bmatrix} 7 & -13 & -6 \\ -4 & 12 & 8 \end{bmatrix}$
18) $\begin{bmatrix} 1 \\ 2 \end{bmatrix}$
19) No
20) $-\frac{1}{34} \cdot \begin{bmatrix} 8 & -22 & 10 \\ -4 & -6 & 12 \\ 5 & -18 & 2 \end{bmatrix}$
21) The dot next to the choice indicates that it is the answer.
22)



23)



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25) The dot next to the choice indicates that it is the answer.