Matrix Quiz … Set 1

Practice Quiz

Solve each system by graphing (and show your work).

1) $y = -x + 3$
   $y = 3x - 1$

2) $3x - 2y = -4$
   $3x - 2y = -6$

Solve each system by substitution (and show your work).

3) $5x + y = 11$
   $-x - 3y = -5$

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

Solve each system of equations using substitution. Show your work.

5) $2x^2 - 3y^2 + 13y - 34 = 0$
   $x - y + 4 = 0$

6) $18x^2 + 6y^2 - 31x + 3y + 4 = 0$
   $x + 3y - 4 = 0$

Solve by graphing.

7) $y = 2e^x$
   $x - y + 2 = 0$

8) $x^2 + y^2 = 144$
   $x^2 - 2y = 64$

Think about it.

9) A total of $18,000 is invested in two funds paying 5% and 7% simple interest. The yearly interest is $1140. How much is invested at each rate?

10) You invest $5000 in a greenhouse. The planter, potting soil, and seed for each plant cost $6.43, and the selling price of each plant is $12.68. how many plants must you sell to break even?

Matrix Quiz … Set 1

Solve each system by elimination. (Only addition is required.)

11) $-6x - y = 1$
$8x + y = 1$

12) $5x - 9y = -19$
$-5x - 3y = 7$

Solve each system by elimination. (Only subrtaction is required.)

13) $-x + 8y = -5$
$4x + 8y = -20$

14) $4x + 5y = -23$
$3x + 5y = -16$

Solve each system by elimination. (Multiply one equation first.)

15) $-6x + 9y = 18$
$-2x - y = 22$

16) $-3x + 6y = -18$
$-x + 12y = -16$

Solve each system by elimination. (Multiply both equations first.)

17) $8x + 9y = 12$
$-3x - 4y = -7$

18) $-8x - 9y = -26$
$5x + 7y = 8$

Word problems: Show all work.

19) Ming and Kali each improved their yards by planting daylilies and shrubs. They bought their supplies from the same store. Ming spent $199 on 13 daylilies and 7 shrubs. Kali spent $136 on 8 daylilies and 6 shrubs. Find the cost of one daylily and the cost of one shrub.

Row-Echelon Form: Solve the system of equations and write your answer as an ordered triple.

20) $x - y + 2z = 22$
$\qquad 3y - 8z = -9$
$\qquad\qquad z = -3$

21) $4x - 3y - 2z = 21$
$\qquad 6y - 5z = -8$
$\qquad\qquad z = -2$

Gaussian Elimination: Solve each system by Gaussian Elimination.

22) $-6x - y + 2z = -6$
$\qquad -x - 2y - 2z = 5$
$\qquad x - 4y + 2z = 7$

23) $x + y - 3z = 26$
$\qquad -5x + 4y + 3z = -4$
$\qquad 2x - 5y = -26$

Nonsquare Systems: Begin by writing the system in row-echelon form, then back-substitute.

24) $5x - 12y + 7z = 16$
$\qquad 3x - 7y + 4z = 9$

25) $2x + 5y - 19z = 34$
$\qquad 3x + 8y - 31z = 54$

Partial Fraction Decomposition: Distinct Linear Factors

26) $\dfrac{7x - 18}{x^2 - 3x - 4}$

27) $\dfrac{8x - 3}{2x^2 - 5x - 3}$

Partial Fraction Decomposition: Repeated Linear Factors

28) $\dfrac{x^3 + 5x^2 + x + 2}{x^4 + x^2}$

Data Analysis: Curve-Fitting

Find a quadratic equation $y = ax^2 + bx + c$ whose graph passes through the following points.

29) $(-1, -4), (1, -2),$ and $(2, 5)$

30) $(-1, 0), (1, 4),$ and $(2, 3)$