Name _____ Date _____

CHAPTER 3

Parents as Partners

For use with Chapter 3

Chapter Overview **One way you can help your student succeed in Chapter 3 is by discussing the lesson goals in the chart below. When a lesson is completed, ask your student the following questions. "What were the goals of the lesson? What new words and formulas did you learn? How can you apply the ideas of the lesson to your life?"**

Lesson Title	Lesson Goals	Key Applications
3.1: Solve Linear Systems by Graphing	Solve systems of linear equations.	• Bus Fares • Work Schedule • Law Enforcement
3.2: Solve Linear Systems Algebraically	Solve linear systems algebraically.	• Fundraising • Guitar Sales • Aviation
3.3: Graph Systems of Linear Inequalities	Graph systems of linear inequalities.	• Shopping • Summer Jobs • Video Game Sales
3.4: Solve Systems of Linear Equations in Three Variables	Solve systems of equations in three variables.	• Marketing • Pizza Specials • Health Club
3.5: Perform Basic Matrix Operations	Perform operations with matrices.	• Manufacturing • Snowboard Sales • Fuel Economy
3.6: Multiply Matrices	Multiply matrices.	• Sports • Grading • Art Supplies
3.7: Evaluate Determinants and Apply Cramer's Rule	Evaluate determinants of matrices.	• Sea Lions • Chemistry • Bermuda Triangle
3.8: Use Inverse Matrices to Solve Linear Systems	Solve linear systems using inverse matrices.	• Gifts • Basketball • Nutrition

Big Ideas for Chapter 3

In Chapter 3, you will apply the big ideas listed in the Chapter Opener (see page 151) and reviewed in the Chapter Summary (see page 221).

1. Solving systems of equations using a variety of methods
2. Graphing systems of equations and inequalities
3. Using matrices

Name _____ Date _____

CHAPTER SUPPORT

CHAPTER 3

Parents as Partners *continued*

For use with Chapter 3

Key Ideas **Your student can demonstrate understanding of key concepts by working through the following exercises with you.**

Lesson	Exercise
3.1	You travel an average of 1440 miles in 24 hours by train. Your average speed for part of the trip is 45 miles per hour. Your average speed for the remainder of the trip is 65 miles per hour. How many hours do you travel at each speed?
3.2	Tickets for a community swimming pool are \$4 each for adults and \$3 each for children. You sell 77 tickets and collect \$256. How many adult tickets do you sell?
3.3	Determine if $(-2, 1)$ is a solution of the system of inequalities. $2x + 3y < 6$; $y \geq \frac{3}{2}x - 3$
3.4	You spend \$31 at a yard sale to buy 48 books. You buy mystery novels for \$.50 each, biographies for \$.75 each, and health books for \$1.25 each. Determine the number of each type of book you buy if you buy twice as many mystery novels as the other two types of books combined.
3.5	Solve the matrix equation for x and y. $2\begin{bmatrix} 6 & -4x \\ y & -3 \end{bmatrix} - \begin{bmatrix} -1 & 8 \\ -5y & 4 \end{bmatrix} = \begin{bmatrix} 13 & 8 \\ 14 & -10 \end{bmatrix}$
3.6	You sell an average of 35 bottled waters, 75 sandwiches, and 5 bags of chips to adults and 28 bottled waters, 32 sandwiches, and 8 bags of chips to children at the concession stand per day. Bottled water sells for \$.75, sandwiches sell for \$1.25, and chips sell for \$.50. Use matrices to find the total receipts.
3.7	You are using plywood to make a triangular base for a plant stand. The vertices of the triangle are (0, 0), (6.5, 1), and (1, 12) where the coordinates are measured in inches. Use a determinant to find the area of the base.
3.8	Use an inverse matrix to solve the linear system. $5x - 6y = 13$; $-4x + 5y = -10$

Home Involvement Activity

Directions Investigate the after 6:00 P.M. prices of children, adult, and senior citizens' movie tickets at your local theater. Ask the manager for total receipts and the total number of tickets sold on a Saturday night. Use a linear system and Cramer's rule to find how many of each type of ticket are sold.

Answers

3.1: 6 h at 45 mi/h; 18 h at 65 mi/h **3.2:** 25 **3.3:** yes **3.4:** 32 mysteries, 10 biographies, 6 health **3.5:** $x = -2; y = 2$ **3.6:** \$187.50 **3.7:** 38.5 $in.^2$ **3.8:** $(5, 2)$