

6-4 Practice

Applications of Linear Systems

Form K

Solve each word problem.

1. The concession stand is selling hot dogs and hamburgers during a game. At halftime, they sold a total of 78 hot dogs and hamburgers and brought in \$105.50. How many of each item did they sell if hamburgers sold for \$1.50 and hot dogs sold for \$1.25?
2. The sum of two numbers is 67. The smaller number is 3 less than the larger number. What are the two numbers?
3. There are two different jobs Jordan is considering. The first job will pay her \$4200 per month plus an annual bonus of \$4500. The second job pays \$3100 per month plus \$600 per month toward her rent and an annual bonus of \$500. Which job should she take?
4. The perimeter of a rectangle is 66 cm and its width is half its length. What are the length and the width of the rectangle?
5. A chemist is mixing one solution that is 32% sodium and another solution that is 12% sodium. How many liters of each type should the chemist use to produce 50 liters of the solution that is 20% sodium?

6-4**Practice** (continued)

Form K

Applications of Linear Systems

6. A community sponsored a charity square dance where admission was \$3 for adults and \$1.50 for children. If 168 people attended the dance and the money raised was \$432, how many adults and how many children attended the dance?
- What are the two systems of equations that you could write to solve this problem?
 - What method would you use to solve the system? Why?
 - How many adults and how many children attended the dance?

Solve each system. Explain why you chose the method you used.

7. $3y = 4x + 1$
 $8x - 2y = 10$

8. $-2y = -4x - 2$
 $3x + 2y = 9$

9. $3x - 3y = -3$
 $-2x - 3y = 17$

10. $x - 2y = 9$
 $x + 3y = -1$

11. **Open-Ended** Write a system of equations for which you would use substitution to solve.

12. A student invested \$5000 in two different savings accounts. The first account pays an annual interest rate of 3%. The second account pays an annual interest rate of 4%. At the end of one year, she had earned \$185 in interest. How much money did she invest in each account?