Applications	Connections	Extensions

18. On a hot summer day, Jay set up a lemonade stand. He kept track of how many glasses he sold on his phone.

    a. Write two equations that relate the number of large glasses sold l and the number of small glasses sold s.

    b. Solve the system of equations.

    c. How many small glasses were sold?

    d. How many large glasses were sold?

Pablo and Jasmine decide to try some other food trucks after eating at the taco truck in Problem 2.2. For Exercises 19–22, do the following.

    a. Write two equations based on the information.

    b. Solve the system of equations to determine the price of 1 serving of food and the price of 1 drink or bag of chips.

19. Pablo buys 3 servings of jambalaya and 2 drinks for $18.00.
Jasmine buys 1 serving of jambalaya and 2 drinks for $9.00.

20. Pablo buys 4 sandwiches and 4 bags of chips for $24.00.
Jasmine buys 8 sandwiches and 4 bags of chips for $43.00.

21. Pablo buys 3 loaves of zucchini bread and 5 cups of tea for $15.00.
Jasmine buys 5 loaves of zucchini bread and 3 cups of tea for $21.00.

22. Pablo buys 6 apple pies and 2 juices for $39.00.
Jasmine buys 2 apple pies and 4 juices for $18.00.

Solve each system by using the combination method.

23. $\begin{cases} 3x - 2y = 12 \\ -3x + 8y = -6 \end{cases}$

24. $\begin{cases} 4x + 9y = 7 \\ 4x - 9y = 9 \end{cases}$

25. $\begin{cases} 12x - 14y = -8 \\ -8x - 14y = 52 \end{cases}$

26. $\begin{cases} 5x + 15y = 10 \\ 5x - 10y = -40 \end{cases}$

27. $\begin{cases} -6x - 4y = 21 \\ -6x + 3y = 0 \end{cases}$

28. $\begin{cases} 2x - 3y = 14 \\ -x + 3y = -6 \end{cases}$

29. $\begin{cases} 3x + 2y = 17 \\ -2x - y = -12 \end{cases}$

30. $\begin{cases} 4x + 3y = 18 \\ 3x + 4y = 3 \end{cases}$

31. $\begin{cases} -2x + 6y = 42 \\ 4x - 3y = -12 \end{cases}$

My Lemonade Stand

Prices:
$.35 for a small glass
$.50 for a large glass

Total glasses sold: 29
Total sales: $13.45

32. Students in Mr. Coutley's class are playing the game "guess the date." For example, one student chooses a date (April 16), writes the date as an ordered pair (4, 16), and gives two clues.

Clue 1 "If I add the month number and the day number, the sum is 20."

Clue 2 "If I double the month number and add it to the day number, the sum is 24."

The other students try to determine the date based on the two clues. Find the date that each student is thinking of by writing and solving a system of two equations.

First Clue: If I double the month number and add it to double the day number, the sum is 26.

Second Clue: If I double the month number and then subtract double the day number, the difference is -18.

ANDREW

First Clue: If I double the month number and add the day number, the sum is 26.

Second Clue: If I multiply the month number by 10 and then subtract the day number, the difference is 10.

LARA

First Clue: The sum of triple the month number and double the day number is 62.

Second Clue: The difference of double the month number and the day number is 4.

MARTHA

First Clue: The sum of four times the month number and the day number is 42.

Second Clue: The sum of the month number and four times the day number is 33.

AHNA