NAME

Module 7 Solving Linear Equations and Inequalities of Two Variables

Lesson 4 Solving Consumer/Business Problems Using Linear Equations and Inequalities of Two Variables

Solve the following real-world problems.

1. A first grade class is taking a field trip to the museum. A child's ticket costs $4.50 and an adult's ticket costs $7.00. The total cost of all the tickets is $154. If 4 of the tickets are adults' tickets, how many are children's tickets?

   28 children's tickets

2. Jenni and her four friends went to a basketball game. The group had $25 to spend for food and drinks. During half time, they each bought a drink for $3.00. Each order of nachos costs $5.00. How many orders of nachos can they buy?

   at most 2 orders of nachos

3. Jack plans to spend $55 on film. His choices are to buy a color roll for $3.00 or a black and white roll for $4.00. If Jack buys four rolls of black and white film, how many rolls of color film can he buy?

   at most 13 rolls of color film

4. Carl charges $15 to wash a car and $25 to wash and wax a car. He wants to earn $150 on Saturday. If he washes and waxes three cars, what is the minimum number of cars he must wash to earn at least $150?

   2 cars

5. Miguel has a maximum of $565 to spend at his health club. The weekly membership fee is $25, and each game of racquetball costs $2. Miguel attends the club for 16 weeks. How many games of racquetball can he play?

   82 games

6. Melissa wants to learn how to fly an airplane. It costs $750 to enroll in flight school, and each hour of flight time costs $75. Melissa needs a minimum of 300 hours of flight time to get her license. What is the minimum amount of money she must spend to get her license?

   $23,250

7. Marcus earns $0.50 every time he washes the dishes and $1.50 every time he vacuums the house. If he is trying to save $8.50 and will vacuum the house twice, how many times must he wash the dishes?

   11 times

8. Kristy spent $14 on chips for a party. The chips normally cost $1.75 a bag and she used seven coupons, each for $0.50 off a bag. How many bags of chips did she actually buy?

   10 bags of chips

9. Carrie is taking her dance team on a bus trip. The bus has 22 seats. The bus will hold two adults per seat or three children per seat. If a total of eight adults go on the trip, how many children can go?

   54 children

10. A business owner wants to buy 240 shirts for clients. The shirt salesman will give two free shirts for every 18 the owner buys. If the shirts cost $10 each, how much money does the business owner need to spend to be sure to get at least 240 shirts?

    $2,160

Solve the following problems. Use the variables *x* and *y*, and state what they represent. Write the solutions as ordered pairs.

11. Leslie is participating in a football-throwing contest. She needs to accumulate 16 points to win. She earns four points for every football she throws through the bottom tire and eight points for every football she throws through the top tire. List three different combinations of successful throws that would give her exactly 16 points.

Let *x* be a number of successful throws through the bottom tire.

Let *y* be a number of successful throws through the top tire.

(0, 2), (2, 1) (4, 0)

12. Josie wants to make $7.50 by selling her used music CDs. The buyer will pay $2.50 for each rock CD and $0.50 for each jazz CD. List three different rock CD/jazz CD combinations that Josie could sell to make $7.50.

Let *x* be a number of rock CDs.

Let *y* be a number of jazz CDs.

(0, 15), (1, 10), (2, 5), (3, 0)

13. Jeff is playing a video game with two sizes of targets. The larger target is worth 25 points, and the smaller target is worth 100 points. Jeff's goal is to score 1,000 points. List four different combinations of the number of each type of target he must hit to score 1,000 points.

Let *x* be the number of times he hits the larger target.

Let *y* be the number of times he hits the smaller target.

(0, 10), (4, 9) (8, 8)

14. For home improvement projects, a company charges $50/hour for painting and $75/hour for repairing. If a family has a $600 budget, list three combinations of how much time the company could spend painting or repairing to total $600.

Let *x* be the number of hours painting.

Let *y* be the number of hours repairing.

(0, 8), (3, 6), (12, 0)