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DATE _____

Module 7 Solving Linear Equations and Inequalities of Two Variables
Lesson 4 Solving Consumer/Business Problems Using Linear Equations and Inequalities of Two Variables



**independent
practice**

Solve the following problems.

- Troy and Jimmy see a pair of bicycles in the window of Mr. Johnson's sporting goods store. The total cost of the bicycles is \$269. They need to earn the money to buy the bicycles. If they sell 30 glasses of lemonade at \$2 a glass and then decide to raise the price to \$2.75, how many more glasses do they have to sell before they can afford the bicycles?

- Mahesh earns \$1.25 for cleaning the kitchen and \$0.75 for taking out the trash. Mahesh cleaned the kitchen twice before he and his sister made a deal. Mahesh will always take out the trash, and his sister will always clean the kitchen. If Mahesh combines what he has already earned with what he will earn, how many times will he need to take the trash out to earn \$13?

- Stacy saved \$100 to buy five model airplanes. When Stacy arrived at the store, she found that each airplane cost \$12.25. She also wants to buy two display racks at \$1.00 each to display her finished models. How many airplanes can she afford if she buys the two racks?

- At a car dealership, the sticker price of red cars is \$12,000, and the sticker price of white cars is \$10,275. Danny's dad owns the dealership and agrees to sell Danny one red car for $\frac{3}{4}$ the sticker price and any number of white cars for $\frac{4}{5}$ the sticker price. Danny spends \$19,700 on one red car and some white cars. How many white cars does Danny buy?

- Antwan has asked Tracy to go to the spring dance. Antwan wants to impress Tracy, so he decides to take some dance lessons. Antwan has \$200 to spend, and dance lessons cost \$25 each. He is also going to buy Tracy a dozen roses for the dance. If the florist charges \$2 per rose, how many dance lessons can Antwan afford?

- Manuel wants 15 of Marcus' baseball cards. Marcus wants as many of Manuel's bobble-head dolls as a trade will allow. If the two boys agree that each card is worth \$15 and that each doll is worth \$5, how many dolls can Marcus get from Manuel for all 15 of the baseball cards?

7. The theater club collected \$1,455 in ticket sales for a school play. Ticket prices were \$3 for students and \$5 for nonstudents. If 120 student tickets were sold, how many nonstudent tickets were sold?

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

8. George is the star of a rodeo. He needs to amass 36 total points. He gets 12 points for every calf he ropes and six points for every bull he tames. List four different combinations of calf-ropings and bull-tamings that would give George exactly 36 total points.

9. Pam, Mary, and Dave went to a baseball game. They had \$48 to spend on T-shirts and baseball hats. If T-shirts cost \$12 and baseball hats cost \$8, find three possible combinations of T-shirts and baseball hats they can buy.

10. Each tower of blocks takes 45 minutes to construct and each wooden spider takes 15 minutes to construct. List five different combinations of towers and spiders that can be constructed in 3 hours.

11. Joy plans to spend \$40 at a toy store on stuffed tigers and stuffed lions. Stuffed tigers are \$7 each, and stuffed lions are \$12 each. List all combinations of stuffed tigers and lions she can buy.

12. Joan has \$3.50 to spend at the candy shop. Chocolate bars are \$1.50 each, and peanut butter bars are \$0.50 each. List three combinations of chocolate bars and peanut butter bars that Joan can buy.

Journal

1. Why is it important to write a sentence as an answer to an application problem?
2. Describe a situation that could be modeled using a linear equation of two variables.
3. Describe a situation that could be modeled using a linear inequality of two variables.
4. In an application problem, how do you know when to use a linear equation and when to use a linear inequality?
5. List at least six phrases that indicate an inequality.



Cumulative Review

For each problem, define the variable, write an equation or inequality, and solve.

1. There are 50 soldiers in a boot camp. How many of the soldiers are wearing green if 35 of them are not wearing green?
2. There were 30 students on a bus trip. When the bus stopped for lunch, nine of the students went for a walk. How many of the students did not go for a walk?
3. Two hundred fifty minus what number is 35 times five?
4. Seventeen is three more than twice what number?
5. If twice a number is 12, what is three times that number?
6. How many dimes are worth 75 cents less than 35 quarters?
7. How many 12-cent balls can be purchased for \$12?
8. Find all the numbers that satisfy the following statement: Half of a number is greater than 3 more than twice the number.
9. Find all the numbers that satisfy the following statement: One third a number is less than or equal to four more than three times the number.
10. For what numbers is three greater than four times the number?

