

Concept and Vocabulary:

1. If x represents a number, six subtracted from four times the number can be represented by _____.
2. According to *Forbes* magazine, the top-earning dead celebrities in 2010 were Michael Jackson and Elvis Presley. Jackson's earning exceeded Presley's earnings by \$215 million. If x represents Presley's earnings, in millions of dollars, Jackson's earnings can be represented by _____.
3. If the number of any left-hand page in this book is represented by x , the number on the facing page can be represented by _____.
4. I can rent a car for \$125 per week plus \$0.15 for each mile driven. If I drive x miles in a week, the cost for the rental can be represented by _____.
5. If x represents a rectangle's width and $4x$ represents its length, the perimeter of the rectangle can be represented by _____.
6. I purchased a computer after a 35% price reduction. If x represents the computer's original price, the reduced price can be represented by _____.

Practice Exercises:

In exercises 1 - 17 every other odd, let x represent the number. Use the given conditions to write an equation. Solve the equation and find the number.

1. A number increased by 60 is equal to 410.
Find the number.
5. The product of 7 and a number is 126.
Find the number.

9. The sum of four and twice a number is 56. Find the number.
17. Nine times a number is 30 more than three times that number. Find the number.

13. A number increased by 5 is two times the number. Find the number.

Application Exercises:

In exercises 21 - 45 odd, use the five-step strategy to solve each problem.

21. How will you spend your average life expectancy of 78 years? The bar graph in the text shows the average number of years you will devote to each of our most time consuming activities.

According to the American Bureau of Labor Statistics, you will devote 37 years to sleeping and watching TV. The number of years sleeping will exceed the number of years watching TV by 19. Over your lifetime, how many years will you spend on each of these activities?

23. The bar graph in the text shows the average yearly earnings in the United States for people with a college education, by final degree earned.

The average yearly salary of an American whose final degree is a master's is \$49 thousand less than twice that of an American whose final degree is a bachelor's. Combined, two people with each of these educational attainments earn \$116 thousand. Find the average yearly salary of Americans with each of these final degrees.

25. The sum of the page numbers on the facing pages of a book is 629. What are the page numbers? [Hint: page numbers on facing pages of a book are consecutive integers.]

27. Roger Maris and Babe Ruth are among the ten baseball players with the most home runs in a major league baseball season. The number of home runs by Roger Maris in 1961 and the number of home runs by Babe Ruth in 1921 are related in the following manner: The number of home runs for these players in the given seasons are consecutive odd integers whose sum is 120 with Babe Ruth having fewer home runs than Roger Maris. Determine the number of homers hit by Ruth and by Maris in the given years.

29. A car rental agency charges \$200 per week plus \$0.15 per mile to rent a car. How many miles can you travel in one week for \$320?

31. The bar graph in the text shows that average rent and mortgage payments in the United States have increased since 1975, even after taking inflation into account.

In 2008, mortgage payments average \$1514 per month. For the period shown, monthly mortgage payments increased by approximately \$20 per year. If this trend continues, how many years after 2008 will mortgage payments average \$1714? In which year will this occur?

33. A rectangular field is four times as long as it is wide. If the perimeter of the field is 500 yards, what are the field's dimensions?

35. An American football field is a rectangle with a perimeter of 1040 feet. The length is 200 feet more than the width. Find the width and length of the rectangular field.
37. A bookcase is to be constructed as shown in the text. The length is to be 3 times the height. If 60 feet of lumber is available for the entire unit, find the length and height of the bookcase.
39. After a 20% reduction, you purchase a television for \$320. What was the television's price before the reduction?
41. This year's salary, \$50,220, is an 8% increase over last year's salary. What was last year's salary?

43. Including 6% sales tax, a car sold for \$23,850. Find the price of the car before the tax was added.

45. An auto repair shop charged a customer \$448, listing \$63 for parts and the remainder for labor. If the cost of labor is \$35 per hour, how many hours of labor did it take to repair the car?