2.5 Intro to Problem Solving

***Directions*: In the following exercises, let x represent the unknown number. Use the given conditions to write an equation. Solve the equation and find the number.**

1. The sum of a number and 43 is 107. Find the number.
2. The quotient of a number and 19 is 5. Find the number.
3. Three times the sum of five and a number is 48. Find the number.
4. 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.
5. The sum of the page numbers on the facing pages of a book is 525. What are the page numbers?
6. Babe Ruth and Hank Greenberg are among the ten baseball players with the most home runs in a major league baseball season. The number of home runs by these players in a season (Ruth in 1927 and Greenberg in 1938) are consecutive even integers whose sum is 118. Determine the number of homers hit by Greenberg and by Ruth.
7. A car rental agency charges \$180 per week plus \$0.25 per mile to rent a car. How many miles can you travel in one week for \$395?
8. 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?
9. A basketball court is a rectangle with a perimeter of 86 meters. The length is 13 meters more than the width. Find the width and length of the basketball court.
10. After a 30% reduction, you purchase a DVD player for \$98. What was the price before the reduction?
11. This year's salary, \$42,074, is a 9% increase over last year's salary. What was last year's salary?
12. Including 8% sales tax, a bed-and-breakfast inn charges \$1.72.80 per night. Find the inn's nightly cost before the tax is added.

Answers: 1) $x + 43 = 107$; 64 2) $\frac{x}{19} = 5$; 95 3) $3(5 + x) = 48$; 11
4) Bachelor's \$55 thousand; Master's \$61 thousand 5) pages 262 and 263
6) Greenberg 58; Ruth 60 7) 860 miles 8) 50 yds wide and 200 yds long
9) 15 meters wide and 28 meters long 10) \$140 11) \$38,600 12) \$160