

Name \_\_\_\_\_

Date \_\_\_\_\_

## Word Problems Leading to Linear Equations

Math 8

Steps involved in solving a linear equation word problem:

- Read the problem carefully and note what is given and what is required
- Denote the unknown by the variables as  $x$  or  $y$  or another letter of your choosing
- Translate the problem to the language of mathematics or mathematical statements.
- Form the linear equation in one variable using the conditions given in the problems.
- Solve the equation for the unknown.
- Verify to be sure whether the answer satisfies the conditions of the problem.

### **AGE PROBLEMS:**

1. Mark is three times as old as his son Brian. In ten years, Mark will be 43 years old. In how many years will Mark be twice as old as Brian?

2. Gary is twice as old as his niece Candy. How old will Candy will be in five years when Gary is 37 years old?

3. Aaron is 5 years younger than Ron. Four years later, Ron will be twice as old as Aaron. Find their present ages.

4. Robert's father is 4 times as old as Robert. After 5 years, father will be three times as old as Robert. Find their present ages.

**PERIMETER PROBLEMS:**

5. If a rectangle possesses a width of 2 inches and has a perimeter of 18 inches, then what is the length?

6. If a rectangle possesses a width of 8 inches and has a perimeter of 36 inches, then what is the length?

7. The length of a rectangle is 2 inches more than the width. If the perimeter of the rectangle is 20 inches, what is the measurement of the width?

8. The length of a rectangle is twice its width. If the perimeter of the rectangle is 36 inches, what is the actual measurement of the length and width?

**MONEY PROBLEMS**

9. Melissa went shopping and spent half of her money on shoes, a third on a blouse, a tenth to take her boyfriend to lunch, and she came home with \$12. How much did she start out with?

10. Jane spent \$42 for shoes. This was \$14 less than twice what she spent for a blouse. How much was the blouse?

11. Julie has \$50, which is eight dollars more than twice what John has. How much money does John have?

12. Jim has quarters and nickels. He has twice as many quarters as nickels. If the value of the coins totals \$4.40, how many quarters and nickels does Jim have?
13. Martin has a total of 19 nickels and dimes worth \$1.65. How many of each type of coin does he have?
14. John received change worth \$13. He received 10 more dimes than nickels and 22 more quarters than dimes. How many coins of each did he receive?
15. Linda was selling tickets for the school play. She sold 10 more adult tickets than children tickets and she sold twice as many senior tickets as children tickets. How many of each type of ticket was sold?