

For each problem, define two variables. Then, use a system of equations and elimination to solve the problem.

1. The sum of two numbers is 45. Their difference is 7. Find the numbers.
2. A room is 12 feet longer than it is wide. Half the perimeter of the rectangular floor is 72 feet. Find the length and the width.
3. The difference between twice one number and the lesser number is 21. The sum of the lesser number and twice the greater number is 27. Find the numbers.
4. Mr. Fleming's farm is 32 acres smaller than Mr. Laycock's farm. The two farms together contain 276 acres. How large is each farm?
5. A father is three times the age of his son. In six years, the father will be $2\frac{1}{2}$ times the age of his son. Find their present ages.
6. The greater of two numbers is twice the lesser. If the greater is increased by 18, the result is 4 less than 4 times the lesser. Find the numbers.
7. The sum of two numbers is 48. Their difference is 24. Find the numbers.
8. The sum of two numbers is 64. Their difference is 42. Find the numbers.
9. The sum of two numbers is 101. Their difference is 25. Find the numbers.
10. Half the perimeter of a rectangular garden is 100m. The garden is 10 m longer than it is wide. Find its length and width.
11. The difference between twice one number and a lesser number is 32. The sum of the lesser number and twice the greater number is 60. Find the numbers.
12. The sum of two numbers is 25 and twice their difference is 14. Find the numbers.
13. Half the sum of two numbers is 26. Four times one of the numbers is the same as one-third of the other number. Find the numbers.
14. The sum of two numbers is 22. Five times one of the numbers equals six times the other number. Find the numbers.
15. The difference between two numbers is four. Twice the larger equals three times the sum of the smaller number and two. Find the numbers.

16. A 140-meter rope is cut into two pieces. One piece is four times as long as the other. How long is each piece?
17. The difference between the length and the width of a rectangle is 7cm. The perimeter of the rectangle is 50cm. Find the length and the width.
18. Maddie is three times as old as Sarah. In 10 years, Maddie will be twice as old as Sarah. Find their present ages.
19. A rectangle has a perimeter of 40cm. The length of the rectangle is 1cm less than twice the width. Find the length and the width of the rectangle.
20. The greater of two numbers is 1 less than 4 times the lesser number. Three times the lesser number is 4 less than the greater. Find the numbers.
21. The perimeter of a rectangle is 86cm. Twice the width exceeds the length by 2cm. Find the dimensions of the rectangle.
22. The sum of Ashley's age and Arianna's age is 52. Arianna is 20 years older than Ashley. How old is each?