Equations

Applications of Equations—Numbers

Name _____

OBJECTIVES: To use various methods of problem solving to answer the number word problems below

1. One number is three less than the other. Their sum is 21. Find the numbers.

2. One number is five times another. The sum of the numbers is 108. Find the numbers.

3. The second of two numbers is four times the first. Their sum is 45. Find the numbers.

4. The sum of two numbers is 31. The first is five less than the second. Find the numbers.

Example

One number is five more than the second. Find the numbers if their sum is 115.

1. Define variables.   let x = 2nd number
   $x + 5 = $ 1st number

2. Write equation. $x + (x + 5) = 115$

3. Solve and check. $2x + 5 = 115$
   $2x + 5 + \text{-}5 = 115 + \text{-}5$
   $\dfrac{2x}{2} = \dfrac{110}{2}$
   $x = 55$
   $x + 5 = 60$
   $55 + 600 = 115$

---

5. The second of two numbers is one more than twice the first. Their sum is 25. Find the numbers.

6. The first of two numbers is seven less than five times the second. Their sum is 113. Find the numbers.

7. The sum of three numbers is 45. The first number is four times the second, while the third number is nine more than the second. Find the numbers.

8. The sum of three numbers is 49. The second number is twice the first, and the third is one less than the second. Find the numbers.

9. The first of two numbers is nine more than the second. Three times the first is equal to seven more than five times the second. Find the numbers.

10. The greater of two numbers is five more than the smaller. If the smaller number is added to twice the greater number, the result is 22. Find the numbers.

11. The second of two numbers is six less than the first. Twice the sum of the first number and one is the same as nine times the second number. Find the numbers.

23