SmartMathz

Word Problems Leading to Equations

Grade 7 Place Value Worksheet

Date:_____ Name:_____

LET'S MAKE WORD PROBLEMS LEADING TO EQUATIONS EASY

Solve the following problems

1. If $\frac{3}{5}$th of a number is 4 more than $\frac{1}{2}$ the number, then what is the number ?
2. The cost of two tables and three chairs is $705. If the table costs $40 more than the chair, find the cost of the table and the chair.
3. The sum of two consecutive multiples of 5 is 55. Find these multiples.
4. Rob's father is 4 times as old as Rob. After 5 years, father will be three times as old as Rob. Find their present ages.
5. A number is divided into two parts, such that one part is 10 more than the other. If the two parts are in the ratio 5 : 3, find the number and the two parts.
6. Zaron is 5 years younger than Zoe. Four years later, Zoe will be twice as old as Zaron. Find their present ages.
7. The length of a rectangle is twice its breadth. If the perimeter is 72 metre, find the length and breadth of the rectangle.
8. The difference between the two numbers is 48. The ratio of the two numbers is 7:3. What are the two numbers?
9. The sum of two numbers is 25. One of the numbers exceeds the other by 9. Find the numbers.
10. The difference between the two numbers is 48. The ratio of the two numbers is 7:3. What are the two numbers ?

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Answers

1. Let the number be x; x = 40

2. The cost of the chair is 125 dollars while the cost of the table is 165 dollars.

3. The two consecutive multiples of 5 whose sum is 55 are 25 and 30.

4. Rob's present age is 10 years and that of his father's age = 40 years.

5. The two parts are 15 and 25.

6. The present age of Zoe is 6 years and present age of Zaron is 1 year.

7. The length of the rectangle is 24 m and breadth of the rectangle is 12 m.

8. The two numbers are 84 and 36.

9. The two numbers are 8 and 17.

10. The two numbers are 84 and 36.

Answer Explanation

1. Let the number be x, then $\frac{3}{5}$th of the number = $\frac{3x}{5}$
   Also, $\frac{1}{2}$ of the number = $\frac{x}{2}$
   So, we have: $\frac{3x}{5} - \frac{x}{2} = 4$
   $\frac{6x-5x}{10} = 4$
   $\frac{x}{10} = 4$
   x = 40

2. Let's assume the cost of the chair to be x
   Then the cost of table = 40 + x
   The cost of 3 chairs = 3x and the cost of 2 tables = 2(40 + x)
   Total cost of 2 tables and 3 chairs = 705
   Therefore, 2(40+x) + 3x = 705
   80 + 2x + 3x=705
   5x= 705 − 80
   5x = 625
   x = 125, and
   40 + x = 40 + 125 = 165

3. Let the first multiple of 5
   Then the other multiple of 5 will be x + 5 and their sum = 55
   So, x + x + 5= 55
   2x + 5= 55
   2x = 50
   x = 25
   Therefore, the multiples of 5, x + 5= 25 + 5 = 30.
   The two consecutive multiples of 5 whose sum is 55 are 25 and 30.

4. Let Rob's age be x years.
   Then Rob's father's age = 4x
   After 5 years, Robert's age = x + 5
   Father's age = 4x + 5
   According to the question,
   4x + 5 = 3(x + 5)
   4x + 5 = 3x + 15
   4x - 3x = 15 - 5
   x = 10
   4x = 4 (10) = 40
   Rob's present age is 10 years and that of his father's age = 40 years.

5. Let one part of the number be x
   Then the other part of the number = x + 10
   The ratio of the two numbers is 5 : 3
   Therefore, (x + 10)/x = 5/3
   3(x + 10) = 5x
   3x + 30 = 5x
   30 = 5x - 3x
   30 = 2x
   x = 15
   Therefore, x + 10 = 15 + 10 = 25
   Then, the number = 25 + 15 = 40
   The two parts are 15 and 25.

6. Let Zoe's present age be x. Then Zaron's present age = x - 5
   After 4 years Zoe's age = x + 4, Zaron's age x - 5 + 4.
   According to the question;
   Zoe will be twice as old as Zaron.
   Therefore, x + 4 = 2(x - 5 + 4)
   x + 4 = 2(x - 1)
   x + 4 = 2x - 2
   x + 4 = 2x - 2
   x - 2x = -2 - 4
   -x = -6
   x = 6
   Therefore, Zaron's present age = x - 5 = 6 - 5 = 1
   Then, present age of Zoe = 6 years and present age of Zaron = 1 year.

7. Let the breadth of the rectangle be x,
   Then the length of the rectangle = 2x
   Perimeter of the rectangle = 72
   Therefore, according to the question
   2(x + 2x) = 72
   2 (3x) = 72
   6x = 72
   x = 12
   We know, length of the rectangle = 2x = 2 (12) = 24
   Therefore, length of the rectangle is 24 m and breadth of the rectangle is 12 m.

8. Let the common ratio be x. Their difference = 48
   According to the question, 7x - 3x = 48
   4x = 48
   x = 12
   Therefore, 7x = 7(12) = 84
   3x = 3(12) = 36
   Therefore, the two numbers are 84 and 36.

9. Let the number be x. Then the other number = x + 9
   Sum of two numbers = 25
   According to question, x + x + 9 = 25
   2x + 9 = 25
   2x = 25 - 9 (transposing 9 to the R.H.S changes to -9)
   2x = 16
   x = 8
   Then, x + 9 = 8 + 9 = 17
   Therefore, the two numbers are 8 and 17.

10. Let the common ratio be x. Their difference = 48
    According to the question, 7x - 3x = 48
    4x = 48
    x = 12
    Then, 7x = 7 (12) = 84
    3x = 3 (12) = 36
    Therefore, the two numbers are 84 and 36.