

LINEAR EQUATIONS- WORDED PROBLEMS

Worksheet # 1

1. When I think of a number, double it, then add seven, I get 25. What number did I think of?
2. I think of a number, halve it and the result is 9. Determine the number that I thought of.
3. The length of a rectangle is 10 cm, which is $\frac{1}{3}$ of its perimeter. Evaluate its perimeter.
4. I think of a number, double it and the result is 9. Evaluate the number that I first thought of.
5. When I think of a number, double it, then add seven, I get 23. Determine the number that I first thought of.
6. When I think of a number, double it, then add five, I get 13. Determine the number that I thought of.
7. I think of a number, double it, then subtract three. The result is 12. What number did I think of?
8. I think of a number, triple it, then add three, I get 33. Evaluate the number that I thought of.
9. I think of a number. If I subtract 6 from it and multiply the difference by 4 the result is 36. Evaluate the number that I thought of.
10. When I think of a number and add 5, then the result is 25. Form an equation and solve it to find the number that I thought of.
11. When I think of a number and halve it, then the result is 7. Form an equation and solve it to find the number that I thought of.

Form equations to represent the following statements and determine the unknown numbers:

12. I think of a number, add 7 and the result is 15.
13. I think of a number, subtract 5 and the result is 9.
14. If 6 is subtracted from a number then we get 4.
15. I think of a number, double it and the result is 15.
16. An unknown number multiplied by 8 gives 32.
17. I think of a number and add $\frac{1}{5}$ of it to $\frac{1}{2}$ of it. The result is 14. Determine the number that I thought of.

18. I think of a number and add $\frac{1}{4}$ of it to $\frac{3}{5}$ of it. The result is 34. Evaluate the number that I thought of.

19. The lengths of the three sides of a triangle are x cm, $2x$ cm and $3x$ cm. Its perimeter is 30 cm. Evaluate x .

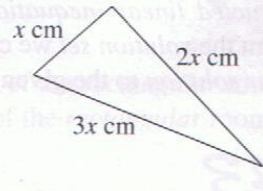


Fig. 6.22 Triangle

20. The sides of a rectangle are x cm and 5 cm. Its perimeter is 29 cm. Calculate the value of x .

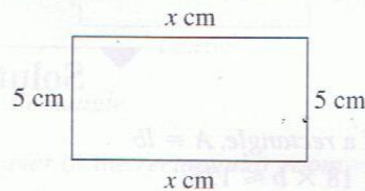


Fig. 6.23 Rectangle

21. The sides of a rectangle are x cm and 4 cm. Its perimeter is 46 cm. Determine the value of x .
22. The length of a rectangle is 5 cm more than its width. If its perimeter is 58 cm, calculate its dimensions.
23. The width of a rectangle is 7 cm less than its length. If its perimeter is 50 cm, calculate its dimensions.
24. The three angles of a triangle are $(x - 25)^\circ$, $(2x + 40)^\circ$ and 30° . Calculate the magnitude of each angle, given that the sum of the angles of a triangle is 180° .
25. The angles of a triangle are $(x - 5)^\circ$, $(x + 15)^\circ$ and $(2x + 10)^\circ$. Given that the sum of the angles of a triangle is 180° , calculate the size of each angle.
26. The three angles of a triangle are $(2x + 5)^\circ$, $(x - 10)^\circ$ and 65° . Evaluate the magnitude of each angle.
27. Given that the angles of a triangle are $(2x + 20)^\circ$, $(x + 25)^\circ$ and $(2x - 15)^\circ$, calculate the size of each angle.
28. Determine three consecutive even numbers whose sum is 60.

29. Determine three consecutive odd numbers whose sum is 57.
30. State the number which when added to both the numerator and the denominator of the fraction $\frac{2}{3}$ gives a new fraction $\frac{6}{7}$.
31. Determine three consecutive even numbers whose sum is 102.
32. Determine three consecutive odd numbers whose sum is 129.
33. Determine the number which when added to both the numerator and the denominator of the fraction $\frac{1}{2}$ gives a new fraction $\frac{3}{4}$.
34. Determine three consecutive even number whose sum is 138.
35. Determine three consecutive odd numbers whose sum is 123.
36. Determine the number which when added to both the numerator and the denominator of the fraction $\frac{3}{5}$ gives a new fraction $\frac{4}{5}$.
37. State the number which when subtracted from both the numerator and the denominator of the fraction $\frac{5}{9}$ gives a new fraction $\frac{1}{2}$.
38. State the number which when subtracted from both the numerator and the denominator of the fraction $\frac{8}{11}$ gives a new fraction $\frac{2}{3}$.
39. Kelly had 12 dollars and spent x dollars. Ami had 6 dollars and collected x dollars. The two girls then had the same amount of money. Form an equation and solve it to determine the value of x .
40. When shopping, Mrs. Van Damme spent $\$x$ in the first shop, twice that amount in the second shop, $\$3$ in the third shop and $\$8$ in the last shop. The total amount that she spent was $\$26$.
 - (a) Form an equation for the amount of money that Mrs. Van Damme spent.
 - (b) Solve the equation to determine the amount of money that she spent at the first shop.
41. Nine books are to be bought by a student. Some cost $\$6$ each and the remainder cost $\$6.50$ each. If the total amount spent was $\$56$, how many of each book are bought?
42. Fourteen articles are bought. Some cost $\$2.00$ each and the remainder cost $\$2.25$ each. If the total amount spent is $\$30$, how many of each article are bought?
43. A man bought 18 fruits. Some cost $\$1.50$ each and the remainder cost $\$2.00$ each. He spent a total of $\$32.50$. How many of each fruit did he buy?
44. A father wants to buy a total of five milk drinks for his son and spend $\$7.95$. An eggnog costs $\$1.55$ and a peanut punch costs $\$1.65$. Determine the number of each milk drink bought.
45. Andrew has eight cassettes. Mary has x cassettes and Jim has twice as many as Andrew. Together they have four times as many as Mary has. Form an equation and determine how many cassettes Mary has.
46. (a) A box of mass 9 kg contains x articles each of mass 1.2 kg. Write down an expression for the total mass of the box and its contents.
 - (b) How many articles are there in the box if the total mass of the box and articles is 21 kg?
47. If four shirts and five jerseys cost $\$370$, calculate the cost of a shirt given that the cost of a jersey is $\$30$.
48. Mrs. Neils bought $\$155$ in groceries. She paid her bill in $\$5$ and $\$20$ notes using a total of 13 notes. Calculate how many $\$20$ notes were used.
49. The length of a rectangle is 3 m greater than its width. Determine its dimensions, if the perimeter of the rectangle is 26 m.
50. A woman had $\$200$. She went to a meatshop, a bookstore and a drugstore. She spent four times as much money at the meatshop as she did at the drugstore. She spent $\$15$ less at the bookstore than at the drugstore. She then had $\$5$ left.
 - (a) Using $\$x$ to represent the amount she spent at the drugstore, express in algebraic terms
 - (i) the amount she spent at the meatshop
 - (ii) the amount she spent at the bookshop
 - (b) Obtain an equation for the total amount of money spent and hence calculate the amount she spent at the drugstore.