MATHS

BOOKS - ICSE

LINEAR EQUATIONS

Example

1. Solve: $3x + 5 = 5x - 11$. Represent the solution graphically.

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2. Solve for x:

$$3x - \frac{1}{4} = 8$$

Represent the solution graphically in each case.

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3. Solve for x:

$$\frac{2}{3}x + 1 = 5$$

Represent the solution graphically in each case.

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4. Solve : $\frac{x}{7} + x = 16$

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5. Solve : $2y + \frac{11}{4} = \frac{1}{3}y + 2$

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6. Solve : $2(x - 5) + 3(x - 2) = 8 + 7(x - 4)$

and check your answer.

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7. Solve: $\frac{2x+1}{7x-2} = \frac{3}{5}$.

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8. Solve: $x - 40\,\%$ of $x = 12$.

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9. Solve : $\frac{5x-3}{2} - \frac{3x-2}{3} = \frac{2}{3}$

A. $x = 2$

B. $x = 1$

C. $x = 3$

D. $x = 4$

Answer: B

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10. Solve : $\frac{x+3}{7} - \frac{3x-5}{5} = \frac{2x-5}{3} - 25$

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11. Four times a number diminished by 5 equals 19.

Find the number.

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12. Four-fifths of a number is greater than three-fourths of the number by 4. Find the number.

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13. A number whose fifth part increased by 4 is equal to its fourth part diminished by 10. Find the number

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14. The sum of three consecutive odd number is 51. Find the numbers.

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15. A man is 24 years older than his son. After 2 years, the man's age will be three times that of his son. Find their present ages.

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16. The length of a rectangular park exceeds its breadth by 17 metres. If the perimeter of the park is

178 metres, find the dimensions of the park.

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17. Two complementary angles differ by 8°. Find the angles.

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18. A man purchased some pens at Rs. 8 each and some pencils at Rs. 2.50 each. If the total number of pens and pencils purchased is 27 and their total cost is Rs. 150, how many pens did he buy?

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Exercise 14 A

1. Solve the equations and check your answer in the case:

$5(x + 4) = 35$

A. z = 2

B. z = 4

C. z = 3

D. z = 5

Answer: C

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2. Solve the equations and check your answer in the case:

$$2\left(y-\frac{5}{2}\right)=0.3$$

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3. Solve the equations and check your answer in the case:

$$\frac{5}{8}x-6=9$$

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4. Solve the equations and check your answer in the case:

$$3x - \frac{5}{3} = x - 3$$

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5. Solve the equations and check your answer in the case:

$$0.6x - 1.9 = 0.2x + 0.5$$

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6. Solve the equations and check your answer in the case:

$2(3y-2)-4(2y-5)=9$

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7. Solve the equations and check your answer in the case:

$5(3-x)+1=3(x+4)$

A. $x=\frac{1}{6}$

B. $x=\frac{1}{3}$

C. $x = \frac{1}{2}$

D. $x = \frac{1}{4}$

Answer: C

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8. Solve the equations and check your answer in the case:

$7 - 2(5 - 3x) = 4(x - 3) + 5$

A. x = -3

B. x = -2

C. x = -4

D. x = -5

Answer: B

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9. Solve the equations and check your answer in the case:

$$6(3x+2)-5(6x-1)=3(x-8)-5(7x-6)+9x$$

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10. Solve the equations and check your answer in the case:

$$p - (2p + 5) - 5(1 - 2p) = 2(3 + 4p) - 3(p - 4)$$

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11. Solve the equations and check your answer in the case:

$$\frac{2x + 3}{3 + x} = \frac{3}{2}$$

A. x = 2

B. x = 1

C. x = 4

D. x = 3

Answer: D

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12. Solve the equations and check your answer in the case:

$$\frac{8-3x}{5x+31}=\frac{2}{3}$$

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13. Solve the equations and check your answer in the case:

$$\frac{x}{3} + \frac{x}{4} = 14$$

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14. Solve the equations and check your answer in the case:

$$\frac{2x}{3} + 4x = 42$$

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15. Solve the equations and check your answer in the case:

$x - 24\,\%$ of $x = 38$

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16. Solve the equations and check your answer in the case:

$$\frac{x+5}{2} + \frac{x}{3} = 20$$

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17. Solve the equations and check your answer in the each case:

$$\frac{2x+3}{3} - \frac{3x-2}{4} = 1$$

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18. Solve the equations and check your answer in the each case:

$$\frac{3y-2}{7} - \frac{5y-8}{4} = \frac{1}{14}$$

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19. Solve the equations and check your answer in the each case:

$$\frac{x-2}{3}+\frac{x-3}{4}=\frac{x-1}{2}$$

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20. Solve the equations and check your answer in the case:

$$\frac{x-4}{7}-\frac{x+4}{5}=\frac{x+3}{7}$$

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21. Solve the equations and check your answer in the case:

$$\frac{2}{3}(3x-2)=\frac{4}{5}(2x-3)-\frac{4}{3}$$

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22. Solve the equations and check your answer in the case:

$$\frac{3}{4}(2x-5)-\frac{5}{6}(7-5x)=\frac{7x}{3}$$

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23. Solve the equations and check your answer in the case:

$$x - \left(2x - \frac{3x - 4}{7}\right) = \frac{4x - 27}{3} - 3$$

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24. Solve the equations and check your answer in the case:

$$\frac{3}{4}(7x - 1) - \left(2x - \frac{1 - x}{2}\right) = x + \frac{3}{2}$$

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Exercise 14 B

1. Three-sevenths of a number is 12. Find the number.

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2. A number increased by 9 gives 43. Find the number.

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3. A number diminished by 11 gives 57. Find the number.

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4. Thrice a number increased by 6 equals 39. Find the number.

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5. Three-fourths of a number exceeds its one-third by 15. Find the number.

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6. A number when divided by 4 is reduced by 21. Find the number.

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7. A number is as much greater than 36 as is less than 86. Find the number.

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8. A number exceeds its four-sevenths by 18. Find the number.

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9. A number exceeds 20% of itself by 40. Find the number.

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10. If 10 be added to four times a certain number, the result is 5 less than five times the number. Find

the number.

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11. One fourth of a number is increased by 7 and the result is multiplied by 3. Thus, we obtain 36. Find the number.

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12. The sum of two consecutive odd numbers is 56. Find the numbers.

A. 26, 27

B. 30, 31

C. 27, 29

D. 29, 31

Answer: C

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13. The sum of three consecutive even numbers is 48. Find the numbers.

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14. One of the two numbers exceeds the other by 9. Four times the smaller added to five times the larger gives 108. Find the numbers.

A. 26, 27

B. 16, 7

C. 20, 7

D. 18, 9

Answer: B

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15. In a class of 40 pupils, the number of girls is three-fifths of the number of boys. Find the number of boys in the class.

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16. The length of a rectangular park is three times its breadth. If the perimeter of the park is 192 meters, find the dimensions of the park.

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17. Two equal sides of a triangle are each 5 metres less than twice the third side. If the perimeter of the triangle is 55 meters, find the lengths of its sides.

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18. Two supplementary angles differ by 44°. Find the angles.

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19. The total cost of 3 tables and 2 chairs is Rs. 8745. If a table costs Rs. 40 more than a chair, find the price of each.

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20. The denominator of a fraction is 3 more than the numerator. If 2 is added to the numerator and 5 is added to the denominator, the fraction becomes $\frac{1}{2}$. Find the fraction.

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21. A man is twice as old as his son. 20 years ago, the age of the man was 12 times the age of the son. Find their present ages.

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22. A man is 28 years older than his son. After 10 years, he will be thrice as old as his son. Find their present ages.

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23. Sunita is 24 years older than her daughter Kavita. 6 years ago, Sunita was thrice as old as Kavita. Find their present ages.

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24. Divide 184 into two parts such that one-third of one part may exceed one-seventh of the other part by 8.

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25. A sum of Rs. 500 is in the form of denominations of Rs. 5 and Rs. 10. If the total number of notes is 90, find the number of notes of each type.

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26. There are some 50 paisa and some 25 paisa coins in a ba. If the total number of coins is 30 and their total value is Rs. 11, find the number of coins of each kind.

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27. A labourer is engaged for 20 days on the condition that the will receive Rs. 280 for each day he works and will be fined Rs. 60 for each day he is absent. If he receives Rs. 2540 in all, for how many days did he remain absent?

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