MATHS

BOOKS - NAVNEET PUBLICATION

EQUATIONS IN ONE VARIABLE

Question Bank

1. $x + 4 = 9$

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2. x - 2 = 7

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3. $\frac{x}{3}$ =4

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4. 4x = 24

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5. Each equation is followed by the values of the variable. Decide whether these values are the solutions of that equation or not.

$x - 4 = 3, x = -1, 7, -7$

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6. Each equation is followed by the values of the variable. Decide whether these values are the solutions of that equation or not.

$9m = 81, m = 3, 9, -3$

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7. Each equation is followed by the values of the variable. Decide whether these values are the solutions of that equation or not.

$2a + 4 = 0, a = 2, -2, 1$

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8. Each equation is followed by the values of the variable. Decide whether these values are

the solutions of that equation or not.

$3 - y = 4, y = -1, 1, 2$

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9. Solve the following equations :

$17p - 2 = 49$

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10. Solve the following equations :

$2m + 7 = 9$

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11. Solve the following equations :

$3x+12 = 2x-4$

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12. Solve the following equations :

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

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13. Solve the following equations :

$$\frac{9x}{8} + 1 = 10$$

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14. Solve the following equations :

$$\frac{y}{7} + \frac{y-4}{3} = 2$$

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15. Solve the following equations :

$$13x - 5 = \frac{3}{2}$$

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16. Solve the following equations :

3(y + 8) = 10(y-4) + 8

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17. Solve the following equations :

$$\frac{x-9}{x-5}=\frac{5}{7}$$

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18. Solve the following equations :

$$\frac{y-4}{3}+3y=4$$

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19. Solve the following equations :

$$\frac{b+(b+a)+(b+2)}{4}=21.$$

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20. Ratna has ₹ 200 more than three times the amount Rafik has. If ₹ 300 from the amount with Ratna are given to Rafik, the amount with Ratna will be $\frac{7}{4}$ times the amount with Rafik. Find the initial amount with Rafik. To find the initial amount, complete the following activity.

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21. Mother is 25 years older than her son. Find son's age, if after 8 years the ratio of son's age to mother's age will be $\frac{4}{9}$.

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22. The denominator of a fraction is greater than its numerator by 12. If the numerator is decreased by 2 and the denominator is

increased by 7, the new fraction is equivalent to $\frac{1}{2}$. Find the fraction.

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23. The ratio of the weights of copper and zinc in brass (alloy) is 13 : 7. Find the weight of zinc in a brass utensil weighing 700 g.

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24. Find three consecutive whole numbers whose sum is more than 45 but less than 54.

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25. In a two-digit number, the digit at the tens place is twice the digit at units place. If the number obtained by interchanging the digits is added to the original number, the sum is 66. Find the original number.

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26. Some tickets of ₹ 200 and some of ₹ 100, of a drama were sold at a theatre. The number of tickets of ₹ 200 sold was 20 more than the number of tickets of ₹ 100. The total amount received by the theatre, by sale of tickets, was ₹ 37,000. Find the number of ₹ 100 tickets sold.

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27. Of the three consecutive natural numbers, five times the smallest number is 9 more than

four times the greatest number, find the numbers.

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28. Raju sold a bicycle to Amit at 8% profit. Amit repaired it spending ₹ 54. Then he sold the bicycle to Nikhil for ₹ 1134 with no loss no profit. Find the cost price of the bicycle for which Raju purchased it.

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29. A cricketer scored 180 runs in the first match and 257 runs in the second match. Find the number of runs he should score in the third match, so that the average of runs in the three matches be 230.

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30. Sudhir's age is 5 more than three times the age of Viru. Anil's age is half the age of Sudhir. If the ratio of the sum of Sudhir's and Viru's

ages to three times Anil's age is 5 : 6, then find Viru's age.

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31. Choose the correct alternative answer for each of the following questions :

One number is thrice the other number. Their sum is 24. What is the equation?

A. $x + \frac{x}{3} = 8$

B. x + 3x = 24

C. $3x - x = 24$

D. $2x + 6x = 24$

Answer:

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32. Choose the correct alternative answer for each of the following questions :

I have $(5x — 1)$ coins of 2 rupees each. What is its value in 5 rupee coins ?

A. $\frac{5x-1}{5}$

B. $\frac{5x-1}{10}$

C. (5(5x-1))/2`

D. $\frac{2(5x-1)}{5}$

Answer:

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33. Choose the correct alternative answer for each of the following questions :

The length of a rectangle is twice breadth. What is the perimeter is 90 cm ?

A. 30 cm

B. 15 cm

C. 45 cm

D. 10 cm

Answer:

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34. Choose the correct alternative answer for each of the following questions :

3 is subtracted from twice a number. If the difference is multiplied by 4, we get 52. Form an equation.

A. $4(2x-3) = 52$

B. $4(3x-2) = 52$

C. $4(x-3) = 52$

D. $4(3-x) = 52$

Answer:

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35. Translate the following into mathematical statements (Use variable x)

The sum of two consecutive odd natural numbers is 50.

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36. Translate the following into mathematical statements (Use variable x)

Eleven less than four times a number is equal to five.

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37. Translate the following into mathematical statements (Use variable x)

Twice a number added to five times the same number gives eighty-four.

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38. Translate the following into mathematical statements (Use variable x)

A number added to one-third of the number is equal to 32.

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39. Translate the following into mathematical statements (Use variable x)

The sum of the measures of the angles of a triangle in the ratio 1:2:3 is 180.

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40. Decide whether the values given against each equation are the solutions of that equation or not :

$7x = 20 - x, x = -\frac{5}{2}, \frac{5}{2}, \frac{3}{2}$

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41. Decide whether the values given against each equation are the solutions of that

equation or not :

15 - 4x = 7, x = 2, - 2, 1

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42. Decide whether the values given against each equation are the solutions of that equation or not :

$\frac{5x+4}{2x+1} = 2; x = 2, -2, 0$

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43. Decide whether the values given against each equation are the solutions of that equation or not :

$\frac{18-2x}{x-4}=\frac{4}{3}$, x = 0, 7, -7

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44. Solve the following equations :

2x + 3 = 3 (x- 1)

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45. Solve the following equations :

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

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46. Solve the following equations :

6(x-1) = 5(x+1)

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47. Solve the following equations :

$$\frac{4}{9} = \frac{x-1}{2x-1}$$

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48. Solve the following equations :

$$\frac{11x-1}{2x+3} = 2$$

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49. Solve the following equations :

$$\frac{3x+5}{2x+7}=4$$

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50. Solve the following problems :

Fill in the blanks:

Anita's present age is x years. Her mother is 30 years older than Anita.

$\therefore$ mother's present age is .....

10 years ago, Anita's age was .....

The ratio of Anita's age to her mother's age, 10 years ago was 1:7

$\therefore$ .....= 1/7

$\therefore$ 7( ) = x+20

$\therefore$ 7x-70 = x+20. $\therefore$ 7x-..... = 20+.....

$\therefore$ .....= 90 $\therefore$ x = 15

$\therefore$ Anita's present age is 15 years. $\therefore$ mother's present age is.....=.....years.

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51. Find three consecutive even natural numbers such that seven times the middle number is 42 less than four times the sum of the other two.

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52. The denominator of a fraction is greater than the numerator by 4. If 1 is subtracted from the numerator and 3 is added to the

denominator, the value of the fraction obtained is $\frac{1}{3}$ Find the original fraction.

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53. The difference between two natural numbers is 73. If the greater number is divided by the smaller number, the quotient is 4 and the remainder is 4. Find the numbers.

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54. The breadth of a rectangle is 15 m less than its length. The perimeter of the rectangle is 430 m. Find the area of the rectangle.

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55. Solve

$$\frac{x+2}{6} - \left(\frac{11-x}{3} - \frac{1}{4}\right) = \frac{3x-4}{12}$$

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56. Solve

$$* \frac{0.5(x-0.4)}{0.35} - (x+6.1) = \frac{0.6(x-2.71)}{0.41}$$

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57. 60 students participated in a quiz contest. Each of the winners would get ₹ 750 and the remaining participants would get ₹ 125 each. If the total amount distributed was ₹ 17,500, find the winners of the contest.

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58. `ast/_\` ABC is an isosceles triangle in which AB = AC. Each of the congruent sides is 3 cm more than the length of the base. If the perimeter of the triangle is 36 cm, find the length of seg AM.

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59. The sum of two numbers is 2100. If 6.5% of one number is equal to 8.5% of the other, find

the numbers.

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60. Ashok sold a bike to Ashish at 6% profit. Ashish spent ₹ 120 for some minor repair. He sold it to Ajay for ₹ 51,000 at no profit no loss. Find the cost price of the bike for Ashok.

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