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MATHS

BOOKS - NAND LAL PUBLICATION

SIMPLE EQUATIONS

Try These

1. The value of expression (10y-20) depends on the value of y. Verify this by giving five different values of y and finding for each y the

value of (10y-20). From the different values of (10y-20) you obtain. Do you see a solution to 10 y-20 = 50? If there is no solution, try giving more values to y and find whether the condition 10y - 20 = 50 is met.

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2. Start with the same step x=5 and make two different, equations. As two of your classmates to solve the equations. Check whether they get the solutions x=5

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3. Try to make two number puzzles, one with the solution 11 and another with 100.

First puzzle with solution 11 : Think of a number, multiply it by 3 and add 2 to the product. The sum is 35. Tell me the number.

Second puzzle with solution 100: Think of a number, divide it by 10 and subtract 5 from the quotient. The result obtained is 5. Tell me the number.

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4. When you multiply a number by 6 and subtract 5 from the product you get 7. Can you tell what the number is ?

5. What is the number one-third of which added to 5 gives 8?

6. A shopkeeper sells mangoes in two types of boxes, one small and one large. A large box contains as many as 8 small boxes plus 4 loose mangoes. Set up an equation which gives the number of mangoes in each small box. The number of mangoes in a large box is given to be 100.

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Exercise 4 1

1. Complete the last column of the table

S.No.	Equation	Value	Say whether the equation is satisfied (Yes/No)
(i)	$x+3=0$	$x=3$	
(ii)	$x+3=0$	$x=0$	
(iii)	$x+3=0$	$x=-3$	
(iv)	$x-7=1$	$x=7$	
(v)	$x-7=1$	$x=8$	
(vi)	$5x=25$	$x=0$	
(vii)	$5x=25$	$x=5$	
(viii)	$5x=25$	$x=-5$	
(ix)	$\frac{m}{3}=2$	$m=-6$	
(x)	$\frac{m}{3}=2$	$m=0$	
(xi)	$\frac{m}{3}=2$	$m=6$	

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2. Check whether the value given in the brackets is a solution to the given equation or

not.

$n + 5 = 19$ $(n = 5)$

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3. Check whether the value given in the brackets is a solution to the given equation or not

$7n + 5 = 19$ $(n = -2)$

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4. Check whether the value given in the brackets is a solution to the given equation or not

$7n + 5 = 19$ $(n = 2)$

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5. Check whether the value given in the brackets is a solution to the given equation or not

$4p - 3 = 13$ $(p = 1)$

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6. Check whether the value given in the brackets is a solution to the given equation or not

$4p - 3 = 13 \ (p = -4)$

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7. Check whether the value given in the brackets is a solution to the given equation or

not

$4p - 3 = 13$ $(p = 0)$

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8. Solve the following equations by trial and error method:

$5p + 2 = 17$

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9. Solve the following equations by trial and error method:

$3m - 14 = 4$

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10. Write equations for the following statements:

The sum of numbers x and 4 is 9.

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11. Write equations for the following statements:

2 subtracted from y is 8.

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12. Write equations for the following statements:

Ten times a is 70.

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13. Write equations for the following statements:

The number b divided by 5 gives 6.

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14. Write equations for the following statements:

Three-fourth of t is 15.

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15. Write equations for the following statements:

Seven times m plus 7 gets you 77.

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16. Write equations for the following statements:

One-fourth of a number x minus 4 gives 4.

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17. Write equations for the following statements:

If you take away 6 from 6 times y, you get 60.

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18. Write equations for the following statements:

If you add 3 to one-third of z, you get 30.

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19. Write the following equations in statement forms:

$p + 4 = 15$

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20. Write the following equations in statement forms:

$m - 7 = 3$

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21. Write the following equations in statement forms:

2m = 7

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22. Write the following equations in statement forms:

$\frac{m}{5} = 3$

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23. Write the following equations in statement forms:

$3\frac{m}{5} = 6$

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24. Write the following equations in statement forms:

3p + 4 = 25

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25. Write the following equations in statement forms:

4p – 2 = 18

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26. Write the following equations in statement forms:

$\frac{p}{2} + 2 = 8$

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27. Set up an equation in the following cases:

Irfan says that he has 7 marbles more than five times the marbles Parmit has. Irfan has 37 marbles. (Take m to be the number of Parmit's marbles.)

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28. Set up an equation in the following cases:

Laxmi's father is 49 years old. He is 4 years

older than three times Laxmi's age. (Take Laxmi's age to be y years.)

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29. Set up an equation in the following cases:

The teacher tells the class that the highest marks obtained by a student in her class is twice the lowest marks plus 7. The highest score is 87. (Take the lowest score to be l.)

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30. Set up an equation in the following cases:

In an isosceles triangle, the vertex angle is twice either base angle. (Let the base angle be b in degrees. Remember that the sum of angles of a triangle is 180 degrees).

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Exercise 4 2

1. Give first the step you will use to separate the variable and then solve the equation:

$x-1 = 0$

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2. Give first the step you will use to separate the variable and then solve the equation:

$x+1 = 0$

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3. Give first the step you will use to separate the variable and then solve the equation:

x-1 =5

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4. Give first the step you will use to separate the variable and then solve the equation:

x+6 = 2

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5. Give first the step you will use to separate the variable and then solve the equation:

y-4 = -7

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6. Give first the step you will use to separate the variable and then solve the equation:

y-4 = 4

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7. Give first the step you will use to separate the variable and then solve the equation:

$y+4 = 4$

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8. Give first the step you will use to separate the variable and then solve the equation:

$y+4 = 4$

Watch Video Solution

9. Give first the step you will use to separate the variable and then solve the equation:

3|= 42

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10. Give first the step you will use to separate the variable and then solve the equation:

$$\frac{b}{2} = 6$$

Watch Video Solution

11. Give first the step you will use to separate the variable and then solve the equation:

$\frac{p}{7} = 4$

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12. Give first the step you will use to separate the variable and then solve the equation:

4x = 25

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13. Give first the step you will use to separate the variable and then solve the equation:

8y = 36

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14. Give first the step you will use to separate the variable and then solve the equation:

$$\frac{z}{3} = \frac{5}{4}$$

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15. Give first the step you will use to separate the variable and then solve the equation:

$$\frac{a}{5} = \frac{7}{15}$$

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16. Give first the step you will use to separate the variable and then solve the equation:

20t = -10

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17. Give the steps you will use to separate the variable and then solve the equation:

3n-2 = 46

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18. Give the steps you will use to separate the variable and then solve the equation:

5m+7 = 17

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19. Give the steps you will use to separate the variable and then solve the equation:

$\frac{20p}{3} = 40$

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20. Give the steps you will use to separate the variable and then solve the equation:

$3\frac{p}{10} = 6$

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21. Solve the following equations:

10p = 100

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22. Solve the following equations:

10p + 10 = 100

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23. Solve the following equations:

$\frac{p}{4} = 5$

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24. Solve the following equations:

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

Watch Video Solution

25. Solve the following equations:

$$\frac{3p}{4} = 6$$

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26. Solve the following equations:

$3s = -9$

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27. Solve the following equations:

$3s + 12 = 0$

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28. Solve the following equations:

$3s = 0$

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29. Solve the following equations:

$2q = 6$

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30. Solve the following equations:

$2q - 6 = 0$

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31. Solve the following equations:

$2q + 6 = 0$

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32. Solve the following equations:

$2q + 6 = 12$

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Exercise 4 3

1. Solve the following equations:

$$2y + \frac{5}{2} = \frac{37}{2}$$

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2. Solve the following equations:

5t + 28 = 10

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3. Solve the following equations:

$$\frac{a}{5} + 3 = 2$$

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4. Solve the following equations:

$$\frac{q}{4} + 7 = 5$$

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5. Solve the following equations

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

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6. Solve the following equations:

$$\frac{5}{2}x = \frac{25}{4}$$

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7. Solve the following equations:

$$7m + \frac{19}{2} = 13$$

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8. Solve the following equations:

$6z + 10 = -2$

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9. Solve the following equations:

$$\frac{3l}{2} = \frac{2}{3}$$

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10. Solve the following equations:

$$\frac{2b}{3} - 5 = 3$$

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11. Solve the following equations:

$2(x + 4) = 12$

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12. Solve the following equations:

$3(n - 5) = 21$

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13. Solve the following equations:

$3(n - 5) = -21$

Watch Video Solution

14. Solve the following equations:

$-4(2 + x) = 8$

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15. Solve the following equations:

$4(2 - x) = 8$

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16. Solve the following equations:

$4 = 5(p - 2)$

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17. Solve the following equations:

$-4 = 5(p - 2)$

Watch Video Solution

18. Solve the following equations:

$16 = 4 + 3(t + 2)$

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19. Solve the following equations:

$4 + 5(p - 1) = 34$

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20. Solve the following equations:

$0 = 16 + 4(m - 6)$

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21. Construct 3 equations starting with $x = -2$

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22. Construct 3 equations starting with $x = -2$

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Exercise 4 4

1. Set up equations and solve them to find the unknown numbers in the following cases:

Add 4 to eight times a number, you get 60.

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2. Set up equations and solve them to find the unknown numbers in the following cases:

One-fifth of a number minus 4 gives 3.

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3. Set up equations and solve them to find the unknown numbers in the following cases:

If I take three-fourths of a number and add 3 to it, I get 21.

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4. Set up equations and solve them to find the unknown numbers in the following cases:

When I subtracted 11 from twice a number, the result was 15.

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5. Set up equations and solve them to find the unknown numbers in the following cases:

Munna subtracts thrice the number of

notebooks he has from 50, he finds the result to be 8.

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6. Set up equations and solve them to find the unknown numbers in the following cases:

Ibenhal thinks of a number. If she adds 19 to it and divides the sum by 5, she will get 8.

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7. Set up equations and solve them to find the unknown numbers in the following cases:

Anwar thinks of a number. If he takes away 7 from $\frac{5}{2}$ of the number, the result is 23

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8. Solve the following:

The teacher tells the class that the highest marks obtained by a student in her class is

twice the lowest marks plus 7. The highest score is 87. What is the lowest score?

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9. Solve the following:

In an isosceles triangle, the base angles are equal. The vertex angle is 40°. What are the base angles of the triangle? (Remember, the sum of three angles of a triangle is 180°).

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10. Solve the following:

Sachin scored twice as many runs as Rahul. Together, their runs fell two short of a double century. How many runs did each one score?

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11. Solve the following:

Irfan says that he has 7 marbles more than five times the marbles Parmit has. Irfan has 37 marbles. How many marbles does Parmit have?

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12. Set up an equation in the following cases:

Laxmi's father is 49 years old. He is 4 years older than three times Laxmi's age. (Take Laxmi's age to be y years.)

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13. Solve the following:

People of Sundargram planted trees in the village garden. Some of the trees were fruit

trees. The number of non-fruit trees were two more than three times the number of fruit trees. What was the number of fruit trees planted if the number of non-fruit trees planted was 77?

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14. Solve the following riddle:

I am a number,

Tell my identity!

Take me seven times over

And add a fifty!

To reach a triple century

You still need forty!

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Additional Questions For Practice With Solution Very Short Answer Type Questions Fill In The Blanks

1. The number 3 is the solution of the equation

$2y + 7 = 13$

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2. The equation for the statement, 3 more than one-fourth of the number x is 5 is

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3. Sum of two consecutive numbers is 9 then the two numbers are 4 and 5

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4. Sum of two consecutive number is 21 then the bigger number is 11.

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5. The number which satisfies the given linear equation is called the solution of the equation.

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6. If the sum of two consecutive number is 13 then their product is 42.

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Additional Questions For Practice With Solution Very Short Answer Type Questions State Whether True Or False

1. The solution of the equation $3x = -2$ is $x = \frac{2}{3}$

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2. The solution of a linear equation in one variable is always an integer

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3. $3x^2 - 1 = 2(x + 1)$ is a linear equation in one variable.

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4. $7x + y = 3$ is not a linear equation

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5. There can be many solutions of the equation x-3 =7

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6. We can divide both sides of the equation by the same non-zero number

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Additional Questions For Practice With Solution Very Short Answer Type Questions Match The Following

1. Match the following

(a)	L.H.S. = R.H.S.	– Transfering a term from one side to other after changing its sign.
(b)	Transposition	– Same solution
(c)	Both sides of the equation	– Value of variable is solution.
(d)	Statement involving symbol '='	– $x = 0$
(e)	Solution of $\frac{x}{3} + 5 = 8$	– can be divided/multiplied by same number
(f)	Many linear equations	– is the statement of equality

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Additional Questions For Practice With Solution

Short Answer Type Questions

1. Rohan's age after 7 years is 17 years. What is his age 6 years ago ?

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2. Sum of two consecutive numbers is 41. What is their product ?

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3. Frame four equations whose solution is 10.

$x = 10$

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4. Frame four equations whose solution is 10.

$x = 10$

Watch Video Solution

5. Frame four equations whose solution is 10.

$x = 10$

Watch Video Solution

6. Frame four equations whose solution is 10.

$x = 10$

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7. The two sides of the square are given by 4y-2 and y+1. Find the perimeter of the square.

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8. Two complementary angles differ by 30°. Find the angles.

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Additional Questions For Practice With Solution Long Answer Type Questions

1. Solve the equation

$$\frac{1}{4}(p-5)=\frac{1}{3}+\frac{2}{3}(p-2)$$

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2. Three numbers are in the ratio 4:5:6. Sum of the larget and the smallest number is the sum of the third and 60. Find the numbers.

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3. The altitude of the triangle is $\frac{5}{3}$ times the base of the triangle. If altitude is increased by 4 cm, and base is decreased by 2 cm, area remains unchanged. Find the base and altitude of triangle.

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4. A motorboat goes upstream on a river and covers the distance between two towns on the riverbank in six hours. It covers this distance

downstream in five hours. If the speed of the stream is 2 km/h, find the speed of the boat in still water.

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Additional Questions For Practice With Solution Hots Answer Type Questions

1. A fruit vendor buys some oranges at the rate of Rs 5 per orange. He also buys an equal number of bananans at the rate of Rs 2 per

banana. He makes a 20% profit on orange and a 15% profit on bananas. At the end of the day, all the fruit is sold out. His total profit is Rs 390. Find the number of oranges purchased.

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Sample Paper For Practice

1. Fill in the blanks

For a given solution the number of equations that can be formed are .....

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2. Fill in the blanks

If 4 times in one variable cannot have more than ..... solution.

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3. Fill in the blanks

If 4 times a number is 40, then the number is .....

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4. Fill in the blanks

The solution of the equation 2y-3 = 7 is .....

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5. State whethe true or false

$3x - 1 < 4$ is a linear equation.

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6. State whethe true or false

If three-fifth of a number is 15, the number is 25.

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7. State whethe true or false

In a linear equation highest power of the variable can be more than 1.

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8. State whethe true or false

We can add/subtract the same number from both sides of the equation.

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9. Write the statement for each of the following

$3(x-5)=18$

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10. Write the statement for each of the following

$$\frac{x}{5} + 1 = 14$$

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11. Write the statement for each of the following

$$x + 3 = 9$$

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12. Write the statement for each of the following

$x - 1 = 1$

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13. Write the following statements as equation

2 subtracted from $\frac{1}{3}$ of y is 7.

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14. Write the following statements as equation

Sum of 5 times p and 1 is 4.

Watch Video Solution

15. Write the following statements as equation

Number y divided by 7 gives 1.

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16. Write the following statements as equation

5 less than thrice the number gives 2.

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17. Sum of two numbers is 31. If they differ by 7,

find the numbers.

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18. Verify whether the values given in the bracket is the solution of the given equation

$2x + 3 = 9$ (when x =5)

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19. Verify whether the values given in the bracket is the solution of the given equation

$\frac{7}{2}x - 6 = 22$ (when x=8)

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20. Two supplementary angle differ by 40°. Find the measures of two angles.

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21. The total cost of 4 bats and 2 balls is Rs 1800. If bat costs Rs 300 more than the ball, find the cost of each bat and each ball.

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22. Each of the two sides of an isosceles triangle is 3 cm less than twice the third side. If the perimeter of the triangle is 64 cm, find the length of each side.

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23. Solve the equation $\frac{x}{2} - 6 = 8 - \frac{2x}{3}$ and verify the result.

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