MATHS

NCERT - NCERT Maths(Hinglish)

LINEAR EQUATIONS IN ONE VARIABLE

Exercise 2 2

1. I have a total of Rs 300 in coins of denomination Re 1, Rs 2 and Rs 5. The number of Rs 2 coins is 3 times the number of Rs 5

coins. The total number of coins is 160. How many coins of each denomination are with me?

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2. The sum of three consecutive multiples of 8 is 888. Find the multiples.

A. $248, 256, 264$

B. $216, 224, 232$

C. $288, 296, 304$

D. None

Answer: C

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3. Lakshmi is a cashier in a bank. She has currency notes of denominations Rs 100, Rs 50 and Rs 10, respectively. The ratio of the number of these notes is 2:3:5. The total cash with Lakshmi is Rs 4,00,000. How many notes of each denomination does she have?

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4. Three consecutive integers add up to 51. What are these integers?

A. $12, 13, 14$

B. $15, 16, 17$

C. $16, 17, 18$

D. $18, 19, 20$

Answer: C

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5. Baichung's father is 26 years younger than Baichung's grandfather and 29 years older than Baichung. The sum of the ages of all the three is 135 years. What is the age of each one of them?

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6. The organisers of an essay competition decide that a winner in thecompetition gets a

prize of Rs 100 and a participant who does not win gets a prize of Rs 25. The total prize money distributed is Rs 3,000. Find the number of winners, if the total number of participants is 63.

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7. Fifteen years from now Ravi's age will be four times his present age. What is Ravi's present age?

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8. If you subtract $\frac{1}{2}$ from a number and multiply the result by you get $\frac{1}{8}$. What is the number?

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9. A rational number is such that when you multiply it by $\frac{5}{2}$ and $\frac{2}{3}$ add to the product, you get $-\frac{7}{12}$. What is the number ?

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10. The ages of Rahul and Haroon are in the ratio 5:7. Four years later the sum of their ages will be 56 years. What are their present ages?

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11. Three consecutive integers are such that when they are taken in increasing order and multiplied by 2, 3 and 4 respectively, they add up to 74. Find these numbers.

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12. The number of boys and girls in a class are in the ratio 7:5. The number of boys is 8 more than the number of girls. What is the total class strength?

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13. The base of an isosceles triangle is $\frac{4}{3}cm$. The perimeter of the triangle is $(4)\frac{2}{15}cm$. What is the length of either of the remaining equal sides?

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14. The perimeter of a rectangular swimming pool is 154 m. Its length is 2 m more than twice its breadth. What are the length and the breadth of the pool?

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15. Two numbers are in the ratio 5:3. If they differ by 18, what are the numbers?

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16. Sum of two numbers is 95. If one exceeds the other by 15, find the numbers.

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Exercise 2 1

1. Solve the equation . $\frac{x}{3} + 1 = \frac{7}{15}$

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2. Solve the equation . $17 + 6p = 9$

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3. Solve the equation . $14y - 8 = 13$

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4. Solve the equation. $x - 2 = 7$

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5. Solve the equation. $y + 3 = 10$

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6. Solve the equation. $6 = z + 2$

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7. Solve the equation. $\frac{3}{7} + x = \frac{17}{7}$

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8. Solve the equation. $6x = 12$

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9. Solve the equation. $\frac{t}{5} = 10$

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10. Solve the equation. $\frac{2x}{3} = 8$

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11. Solve the equation. $1.6 = \frac{y}{15}, \frac{2x}{3} = 18,$

$7x - 9 = 16$

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12. Solve the equation. $7x - 9 = 16$

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Exercise 2 5

1. Simplify and solve the linear equations.

$$15(y-4)-2(y-9)+5(y+6)=0$$

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2. Solve the linear equations. $\frac{x-5}{3}=\frac{x-3}{5}$

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3. Solve the linear equations.

$$m-\frac{m-1}{2}=1-\frac{m-2}{3}$$

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4. Solve the linear equations .

$$\frac{x}{2} - \frac{1}{5} = \frac{x}{3} + \frac{1}{4}$$

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5. Solve the linear equations.

$$\frac{n}{2} - \frac{3n}{4} + \frac{5n}{6} = 21$$

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6. Solve the linear equations.

$$x + 7 - \frac{8x}{3} = \frac{17}{6} - \frac{5x}{2}$$

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7. solve the equation .

$$\frac{3t - 2}{4} - \frac{2t + 3}{3} = \frac{2}{3} - t$$

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8. Simplify and solve the linear equations.

$$3(5z-7)-2(9z-11)=4(8z-13)-17$$

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9. Simplify and solve the linear equations.

$$3(t-3)=5(2t+1)$$

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10. Simplify and solve the linear equations.

$$0.25(4f - 3) = 0.05(10f - 9)$$

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Exercise 2 4

1. Sum of the digits of a two-digit number is 9. When we interchange the digits, it is found that the resulting new number is greater than

the original number by 27. What is the two-digit number?

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2. A positive number is 5 times another number. If 21 is added to both the numbers, then one of the new numbers becomes twice the other new number. What are the numbers?

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3. Amina thinks of a number and subtracts $\frac{5}{2}$ from it. She multiplies the result by 8. The result now obtained is 3 times the same number she thought of. What is the number?

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4. Hasan buys two kinds of cloth materials for school uniforms, shirt material that costs him Rs 50 per metre and trouser material that costs him Rs 90 per metre. For every 2 meters of the trouser material he buys 3 metres of

the shirt material. He sells the materials at 12% and 10% profit respectively. His total sale is Rs 36,660. How much trouser material did he buy?

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5. There is a narrow rectangular plot, reserved for a school, in Mahuli village. The length and breadth of the plot are in the ratio 11:4. At the rate Rs100 per metre it will cost the village

panchayat Rs 75000 to fence the plot. What are the dimensions of the plot?

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6. Shobo's mother's present age is six times Shobo's present age. Shobo's age five years from now will be one third of his mother's present age. What are their present ages?

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7. A grandfather is ten times older than his granddaughter. He is also 54 years older than her. Find their present ages.

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8. Half of a herd of deer are grazing in the field and three fourths of the remaining are playing nearby. The rest 9 are drinking water from the pond. Find the number of deer in the herd.

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9. Aman's age is three times his son's age. Ten years ago he was five times his son's age. Find their present ages.

10. One of the two digits of a two digit number is three times the other digit. If you interchange the digits of this two-digit number and add the resulting number to the

original number, you get 88. What is the original number?

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Solved Examples

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

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2. Solve $2y + 9 = 4$

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3. Find the solution of $2x - 3 = 7$

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4. The present age of Sahil's mother is three times the present age of Sahil. After 5 years their ages will add to 66 years. Find their present ages.

A. $16, 48$

B. $17, 51$

C. $15, 45$

D. $14, 42$

Answer: D

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5. The perimeter of a rectangle is $13cm$ and its width is $2\frac{3}{4}cm$. Find its length.

A. $3\frac{11}{4}$

B. $3\frac{3}{4}$

C. $3\frac{15}{4}$

D. $7\frac{31}{7}$

Answer: B

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6. What should be added to twice the rational number $\frac{-7}{3}$ to get $\frac{3}{7}$

A. 5

B. $\frac{107}{21}$

C. $\frac{3}{7}$

D. $\frac{101}{21}$

Answer: B

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7. Solve $\frac{15}{4} - 7x = 9$

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8. The sum of three consecutive multiples of 11 is 363. Find thesemultiples.

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9. Bansi has 3 times as many two-rupee coins as he has five-rupee coins. If he has in all a sum of Rs 77, how many coins of each denomination does he have?

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10. The digits of a two-digit number differ by 3 If the digits are interchanged and the resulting number is added to the original number we get 143. What can be the original number

A. $58, 85$

B. $48, 84$

C. $64, 69$

D. $74, 47$

Answer: A

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11. Arjun is twice as old as Shriya. Five years ago his age was three times Shriya's age. Find their present ages.

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12. Solve $\frac{6x+1}{3}+1=\frac{x-3}{6}$

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13. Solve

$$5x - 2(2x - 7) = 2(3x - 1) + \frac{7}{2}$$

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14. The difference between two whole numbers is 66. The ratio of the two numbers is 2 : 5. What are the two numbers?

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15. Deveshi has a total of Rs 590 as currency notes in the denominations of Rs 50, Rs 20 and Rs 10. The ratio of the number of Rs 50 notes and Rs 20 notes is 3:5. If she has a total of 25 notes, how many notes of each denomination she has?

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16. Solve $2x - 3 = x + 2$

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17. Solve $5x + \frac{7}{2} = \frac{3}{2}x - 14$

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18. Solve

$$\frac{x+1}{2x+3} = \frac{3}{8}$$

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19. Present ages of Anu and Raj are in the ratio $4:5$. Eight years from now the ratio of their ages will be $5:6$. Find their present ages.

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Exercise 2 6

1. Solve the equation . $\frac{7y+4}{y+2} = \frac{-4}{3}$

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2. The denominator of a rational number is greater than its numerator by 8. If the numerator is increased by 17 and the denominator is decreased by 1, the number obtained is $\frac{3}{2}$. Find the rational number.

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3. Solve the equation. $\frac{3y+4}{2-6y} = \frac{-2}{5}$

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4. Solve the equation. $\frac{8x-3}{3x}=2$

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5. Solve the equation . $\frac{z}{z+15}=\frac{4}{9}$

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6. प्रश्न हल करें। . $\frac{9x}{7-6x}=15$

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7. The ages of Hari and Harry are in the ratio 5:7. Four years from now the ratio of their ages will be 3:4. Find their present ages.

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Exercise 2 3

1. Solve the equation and check your result.

$$3m = 5m - \frac{8}{5}$$

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2. Solve the equation and check your result.

$$\frac{2x}{3} + 1 = \frac{7x}{15} + 3$$

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3. Solve the equation and check your result.

$$2y + \frac{5}{3} = \frac{26}{3} - y$$

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4. Solve the equation and check your result

$5t - 3 = 3t - 5$

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5. Solve the equation and check your result.

$5x + 9 = 5 + 3x$

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6. Solve the equation and check your result

$3x = 2x + 18$

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7. Solve the equation and check your result.

$x = \frac{4}{5}(x + 10)$

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8. Solve the equation and check your result.

$4z + 3 = 6 + 2z$

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9. Solve the equation and check your result.

$2x - 1 = 14 - x.$

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