MATHS

BOOKS - VGS BRILLIANT MATHS (TELUGU ENGLISH)

PAIR OF LINEAR EQUATIONS IN TWO VARIABLES

Example

1. Check whether the given pair of equations represent intersecting, parallel or coincident lines. Find the solution if the equations are consistent. $2x + y - 5 = 0, 3x - 2y - 4 = 0$

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2. Check whether the following pair of equations is consistent. $3x+4y=2$ and $6x+8y=4$ Varify by a graphical representation.

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3. Check whether the equations $2x-3y=5$ and $4x-6y=15$ are consistent. Also verify by graphical representation.

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4. In a garden there are some bees and flowers. If one bee sits on each flower, then one bee will be left. If two bees sit on each flower, once flower will be left. Find the number of bees and number of flowers.

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5. The perimeter of a rectangular plot is 32m. If the length is increased by 2m and the breadth is decreased by 1m, the area of the plot remains the same. Find the length and breadth of the plot.

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6. Solve the given pair of equations using substitution method. $2x-y=5, 3x+2y=11$

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7. Solve the following pair of linear equations using elimination method. $3x+2y=11, 2x+3y=4$

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8. Rubina went to a bank to withdraw Rs. 2000. She asked the cashier to give the cash in Rs. 50 and Rs. 100 notes only. She got 25 notes in all. Can you tell how many notes each of Rs. 50 and Rs. 100 she received?

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9. Rubina went to a bank to withdraw Rs. 2000. She asked the cashier to give the cash in Rs. 50 and Rs. 100 notes only. She got 25 notes in all. Can you tell how many notes each of Rs. 50 and Rs. 100 she received?

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10. In a competitive exam, 3 marks are to be awarded for every correct answer and for every wrong answer, 1 mark will be deducted.

Madhu scored 40 marks in this exam. Had 4 marks been awarded for each correct answer and 2 marks deducted for each incorrect answer, Madhu would have scored 50 marks. How many questions were three in the test?

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11. Mary told her daughter, "Seven years ago, I was seven times as old as you were then. Also, three years from now, I shall be three times as old as you will be." Find the present age of Mary and her daughter.

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12. A publisher is planning to produce a new textbook. The fixed costs are Rs. 320000 per book. Besides that, he also spends another Rs. 31.25 in producing the book. The wholesale price is Rs. 43.75 per

book. How many books must the publisher sell to break even,i.e., so that the cost of production will equal revenues?

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13. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{2}{x}+\frac{3}{y}=13$ and $\frac{5}{x}-\frac{4}{y}=-2$ where $x \neq 0, y \neq 0$.

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14. Kavitha thought of constructing 2 more rooms in her house. She enquired about the labour. She came to know that 6 men and 8 women could finish this work in 14 days. But she wish to complete that work in only 10 days. When she enquired, she was told that 8 men and 12 women could finish the work in 10 days. Find out the

how much time would be taken to finish the work if one man or one woman worked alone.

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15. A man travels 370 km partly by train and partly by car. If he covers 250 km by train and the rest by car, it takes him 4 hours. But if he travels 130 km by train and the rest by car, it takes 18 minutes more. Find the speed of the train and that of the car.

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Do These

1. Solve the following systems of equations:

$x-2y=0$, $3x+4y=20$.

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2. Solve the following systems of equations:

$x+y=2$, $2x+2y=4$.

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3. Solve the following systems of equations:

$2x-y=4$, $4x-2y=6$.

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4. Two rails of a railway track are represented by the equations. $X+2y-4=0$ and $2x+4y-12=0$. Represent this situation graphically..

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5. Check each of the given sustems of equations to see if has a unique solution, infinitely many solutions or no solution. Solve them graphically.

$2x+3y=1$, $3x-y=7$.

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6. Check each of the given sustems of equations to see if has a unique solution, infinitely many solutions or no solution. Solve them graphically.

$x+2y=6$, $2x+4y=12$.

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7. Check each of the given sustems of equations to see if has a unique solution, infinitely many solutions or no solution. Solve them

graphically.

3x+2y=6, 6x+4y=18.

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8. Solve each pair of equation by using the substitution method. 3x-5y=-1 and x-y=-1.

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9. Solve each pair of equation by using the substitution method. $x + 2y = -1$ and 2x-3y=12.

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10. Solve each pair of equation by using the substitution method. 2x+3y=9 and 3x+4y=5.

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11. Solve each pair of equation by using the substitution method. $x + \frac{6}{y} = 6$ and $3x - \frac{8}{y} = 5$.

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12. Solve each pair of equation by using the substitution method. 0.2x+0.3y=1.3 and 0.4x+0.5y=2.3.

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13. Solve each pair of equation by using the substitution method. $\sqrt{2}x + \sqrt{3}y = 0$ and $\sqrt{3}x - \sqrt{8}y = 0$.

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14. Solve each of the following pairs of equations by the elimination method. $8x+5y=9$ and $3x+2y=4$.

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15. Solve each of the following pairs of equations by the elimination method. $2x+3y=8$ and $4x+6y=7$.

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16. Solve each of the following pairs of equations by the elimination method. $3x+4y=25$ and $5x-6y=-9$.

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17. In a competitive exam, 3 marks are to be awarded for every correct answer and for every wrong answer, 1 mark will be deducted. Madhu scored 40 marks in this exam. Had 4 marks been awarded for each correct answer and 2 marks deducted for each incorrect answer, Madhu would have scored 50 marks. How many questions were three in the test?

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18. Mary told her daughter, "Seven years ago, I was seven times as old as you were then. Also, three years from now, I shall be three times as old as you will be." Find the present age of Mary and her daughter.

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Try These

1. Which of the following equations is not a linear equation?

A. 5+4x=y+3

B. x+2y=y-x

C. $3 - x = y^2 + 4$

D. x+y=0

Answer: C

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2. Which of the following is a linear equation in one variable?

A. 2x+1=y-3

B. 2t-1=2t+5

C. $2x - 1 = x^2$

D. $x^2 - x + 1 = 0$

Answer: B

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3. Which of the following numbers is a solution for the equation 2(x+3)=18?

A. 5

B. 6

C. 13

D. 21

Answer: B

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4. The value of x which satisfies the equation 2x-(4-x)=5-x is

A. 4.5

B. 3

C. 2.25

D. 0.5

Answer: C

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5. The equation x-4y=5 has

A. no solution

B. unique solution

C. two solutions

D. infinitely many solutions

Answer: D

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6. A man is 24 years older than his son. In two years, his age will be twice the age of his son. The present age of his son is

A. 14 years

B. 18 years

C. 20 years

D. 22 years

Answer: D

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7. For what value of 'p' the following pair of equations has a unique solution. $2x+py=-5$ and $3x+3y=-6$.

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8. Find the value of 'k' for which the pair of equations $2x-ky+3=0$, $4x+6y-5=0$ represent parallel lines.

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9. For what value of 'k', the pair of equation $3x+4y+2=0$ and $9x+12y+k=0$ represent coincident lines.

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10. For what positive values of 'p' the folllowing pair of linear equations have infinitely many solutions?

$px + 3y - (p - 3) = 0, 12x + py - p = 0$

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Think Discuss

1. The cost of 1kg potatoes and 2 kg tomatoes was Rs. 30 on a certain day. After two days, the cost of 2 kg potatoes and 4 kg tomatoes was found to be Rs. 66.Identify the unknowns in each situation. We observe that there are two unknowns in each case.

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2. The coach of a cricket team of M.K.Nagar High School buys 3 bats and 6 balls for Rs. 3900. Later he buys one more bat and 2 balls for Rs. 1300. Identify the unknowns in each situation. We observe that there are two unknowns in each case.

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3. Is a dependent pair od linear equations always consistent? Why or why not?

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Try This

1. Solve the given pair of linear equations. $(a-b)x+(a+b)y=a^2-2ab-b^2$ and $(a+b)(x+y)=a^2+b^2$

.

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Exercise 4 1

1. By comparing the ratios $\frac{a_1}{a_2}, \frac{b_1}{b_2}, \frac{c_1}{c_2}$, find out whether the represented by the following pairs of linear equations intersect at a point, are parallel or are coincident. 5x-4y+8=0, 7x+6y-9=0.

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2. By comparing the ratios $\frac{a_1}{a_2}, \frac{b_1}{b_2}, \frac{c_1}{c_2}$, find out whether the represented by the following pairs of linear equations intersect at a point, are parallel or are coincident. 9x+3y+12=0 , 18x+6y+24=0.

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3. By comparing the ratios $\frac{a_1}{a_2}, \frac{b_1}{b_2}, \frac{c_1}{c_2}$, find out whether the represented by the following pairs of linear equations intersect at a point, are parallel or are coincident. 6x-3y+10=0 , 2x-y+9=0.

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4. Check whether the following equations are consistent or inconsistent. Solve them graphically.

3x+2y=8, 2x-3y=1.

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5. Check whether the following equations are consistent or inconsistent. Solve them graphically.

2x-3y=8 , 4x-6y=9.

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6. Check whether the following equations are consistent or inconsistent. Solve them graphically.

$\frac{3}{2}x + \frac{5}{3}y = 7$, 9x-10y=12.

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7. Check whether the following equations are consistent or inconsistent. Solve them graphically.

5x-3y = 11, -10x+6y = -22

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8. Check whether the following equations are consistent or inconsistent. Solve them graphically.

$\frac{4}{3}x + 2y = 8, 2x + 3y = 12$

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9. Check whether the following equations are consistent or inconsistent. Solve them graphically.

x+y=5 , 2x+2y=10.

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10. Check whether the following equations are consistent or inconsistent. Solve them graphically.

x-y=8 , 3x-3y=16.

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11. Check whether the following equations are consistent or inconsistent. Solve them graphically.

2x+y-6=0 and 4x-2y-4=0.

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12. Check whether the following equations are consistent or inconsistent. Solve them graphically.

2x-2y-2=0 and 4x-4y-5=0.

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13. Neha went to a 'sale' to purchase some pants and skirts. When her friend asked her how many of each she had bought, she answered "The number of skirts are two less than twice the number of pants purchased. Also the number of skirts is four less than four times the number or pants purchased." Help her friends to find how many pants and skirts Neha bought.

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14. 10 students of Class-X took part in a mathematics quiz. If the number of girls in 4 more than the number of boys then, find the number of boys and the number of girls who took part in the quiz.\

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15. 5 pencils and 7 pens together cost Rs. 50 where as 7 pencils and 5 pens together cost Rs. 46. Find the cost of one pencil and that of one pen.

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16. Half the perimeter of a rectangular garden, whose length is 4m more than its width, is 36m. Find the dimensions of the garden.

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17. We have a linear quations $2x + 3y - 8 = 0$. Write another linear equation in two variables x and y such that the geometrical representation of the pair so formed is intersecting lines.

Now, write two more linear equations so that one forms a pair of parllel lines and the second forms coincident line with the given equation.

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18. The area of a rectangle gets reduced by 80 sq. units if its length is reduced by 5 units and breadth is increased by 2 units. If we increase the length by 10 units and decrease the breadth by 5 units, the area will increase by 50 sq. units. Find the length and breadth of the rectangle.

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19. In X class, if three students sit on each bench, one student will be left. If four students sit on each bench, one bench will be left. Find the number of students and the number of benches in that class.

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Exercise 4 2

1. The ratio of incomes of two persons is $9:7$and the ratio of their expenditures is $4:3$. If each of them manages to save Rs 2000 per month, find their monthly incomes.

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2. The sum of a two-digit number and the number formed by reversing the order of digits is 66. If the two digits differ by 2, find

the number. How many such numbers are there?

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3. The larger of two supplementary angles excceds the smaller by 18°. Find the angles.

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4. The text charges in Hyderabad are fixed, along with the charge for the distance covered. For a distance of 10 km, the charge paid is Rs. 220. For a journey of 15 km, the charge paid is Rs. 310.

What are the fixed charges and charge per km?

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5. The texi charges in Hyderabad are fixed, along with the charge for the distance covered. For a distance of 10 km, the charge paid is Rs. 220. For a journey of 15 km, the charge paid is Rs. 310.

How much does a person have to pay for travelling a distance of 25 km?

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6. A fraction becomes equal to $\frac{4}{5}$ if 1 is added to both numerator and denominator. If, however, 5 is subtracted from both numerator and denominator, the fraction becomes equal to $\frac{1}{2}$. What is the fractions?

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7. Places A and B are 100 km apart on a highway. One car starts from A and another from B at the same time at different speeds. If the caras travel in the same direction, they meet in 5 hours. If they travel towards each other, they meet in 1 hour. What are the speeds of the two cars?

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8. Two angles are complementary. The larger angle is 3° less than twice the measure of the smaller angle. Find the measure of each angle.

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9. An algebra textbook has a total of 1382 pages. It is broken up into two parts. The second part of the book has 64 pages more than the

first part. How many pages are in each part of the book?

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10. A chemist has two solutions of hydrochloric acid in stock. One is 50% solution and the other is 80% solution. How much of each should be used to obtain 100 ml of a 68% solution?

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11. Suppose you have Rs. 12000 to invest. You have to invest some amount at 10% and the rest at 15%. How much should be invested at each rate to yield 12% on the total amount invested?

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Exercise 4 3

1. Solve each of the following pairs of equations by reducing them to a pair of linear equations.

$$\frac{5}{x-1}+\frac{1}{y-2}=2 \text{ and } \frac{6}{x-1}-\frac{3}{y-2}=1.$$

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2. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{x+y}{xy}=2, \frac{x-y}{xy}=6$

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3. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{2}{\sqrt{x}}+\frac{3}{\sqrt{y}}=2$ and $\frac{4}{\sqrt{x}}-\frac{9}{\sqrt{y}}=-1$

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4. Solve each of the following pairs of equations by reducing them to a pair of linear equations. 6x+3y=6xy and 2x+4y=5xy.

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5. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{5}{x+y}-\frac{2}{x-y}=-1$ and $\frac{15}{x+y}+\frac{7}{x-y}=10$ where $x \neq 0, y \neq 0$.

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6. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{2}{x}+\frac{3}{y}=13$ and $\frac{5}{x}-\frac{4}{y}=-2$ where $x \neq 0, y \neq 0$.

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7. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{10}{x+y}+\frac{2}{x-y}=4$ and $\frac{15}{x+y}-\frac{5}{x-y}=-2$

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8. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{1}{3x+y}+\frac{1}{3x-y}=\frac{3}{4}$ and $\frac{1}{2(3x+y)}-\frac{1}{2(3x-y)}=\frac{-1}{8}$.

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9. Formulate the following problem as a pair of equations and then find their solutions.

A boat goes 30 km upstream and 44 km downstream in 10 hours. In 13 hours it can go 40 km upstream and 55 km downstream.

Determine the speed of the stream and that of the boat in still water.

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10. Formulate the following problem as a pair of equations and then find their solutions.

Rahim travels 600 km to his home partly by train and partly by car. He takes 8 hours If he travels 120 km by train and rest by car. He takes 20 minutes more if he travels 200 km by train and rest by car. Find the speed of the train and the car.

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11. Formulate the following problem as a pair of equations and then find their solutions.

2 women and 5 men can together finish an embroidery work in 4

days while 3 women and 6 men can finish it in 3 days. Find the time taken by 1 women alone and 1 man alone to finish the work.

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Optional Exercise

1. Solve the following equations: $\frac{2x}{a} + \frac{y}{b} = 2$ and $\frac{x}{a} - \frac{y}{b} = 4$

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2. Solve the following equations:

$$\frac{x+1}{2} + \frac{y-1}{3} = 8 \text{ and } \frac{x-1}{3} + \frac{y+1}{2} = 9$$

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3. Solve the following equations: $\frac{x}{7} + \frac{y}{3} = 5, \frac{x}{2} - \frac{y}{9} = 6.$

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4. Solve the following system of linear equations (with rational denominator) by using the method of elimination :

$\sqrt{3}x - \sqrt{2}y = \sqrt{3}$ and sqrt(5)x + sqrt(3)y = sqrt(2)`.

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5. Solve the following equations: $\frac{ax}{b} - \frac{by}{a} = a + b$, ax-by=2ab.

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6. Solve the following equations:

$2^x + 3^y = 17$ and $2^{x+2} - 3^{y+1} = 5$

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7. Animals in an experiment are to be kept on a strict diet. Each animal is to among other things 20g of protein and 6g of fat. The laboratory technicians purchased two food mixes. A and B. Mix A has 10% protein and 6% fat. Mix B has 20% protein and 2% fat. How many grams of each mix should be used?

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Observation Material

1. What is ment by consistenft equations? Give example.

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2. The value of k for which the system of equations $x + 2y - 3 = 0$ and $5x + ky + 7 = 0$ has no solution, is (a) 10 (b) 6 (c) 3 (d) 1

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3. Find the value of k for which the pair of equations 2x+ky+3=0,4x+6y-5=0 represent parallel lines.

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4. For what value of k, the following system of equations has a unique solution? $x - ky = 2, 3x + 2y = -5.$

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5. For what value of m the following system of equations will have a unique solution ? $3x + my = 10 \text{ and } 9x + 12y = 30$

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6. Show that the pair of linear equations $7x+y=10$ and $x+7y=10$ are consistent.

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7. Write the condition for the pair of linear equations in two variables to be parallel lines.

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8. If $x=a$ and $y= b$ is solution for the pair of equations $x-y=2$ and $x+y=4$, then find the values of a and b.

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9. The larger of two supplementary angles exceeds the smaller by 58°, then find the angles.

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10. Solve the following equations by substitution method.

(i) 2x-7y=3

(ii) 4x+y=21.

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11. 10 students of Class-X took part in a mathematics quiz. If the number of girls in 4 more than the number of boys then, find the number of boys and the number of girls who took part in the quiz.\

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12. Sove the following pair of linear equations by substitution method. $2x-3y=19$ and $3x-2y=21$.

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13. Given the linear equations $3x+4y=11$, write linear equations in two variables such that the their geometrical representations from parallel lines and intersecting lines.

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14. Solve the given pair of linear equations by elimination method. $2x+y-5=0$ and $3x-2y-4=0$.

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15. Solve the following equations graphically. $\frac{1}{3}x + \frac{1}{2}y = 1, 2x - \frac{1}{3}y = -\frac{2}{3}.$

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16. Solve the given pair of linear equations by elimination method. 2x+y-5=0 and 3x-2y-4=0.

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17. Draw the graphs of the following equations 3x-y-2=0 and 2x+y-8=0 on the graph paper.

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18. S.T the equation $2x^2 - 13xy - 7y^2 + x + 23y - 6 = 0$ represents a pair of straight lines. Also find the angle between them and the coordinates of the point of intersection of the lines.

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19. Find the area of the triangle formed by the lines $y = x, y = 2x, y = 3x + 4$

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20. Draw the graph for the following pair of linear equation in two variables and find their solution from the graph. 3x-2y=2 and 2x+y=6.

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21. Draw the graph for the equations $2x-y-4=0$ and $x+y+1=0$ on the graph paper and check whether they are consistent or not.

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22. Draw the graph of $2x+y=6$ and $2x-y+2=0$ and find the solution from the graph.

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23. Show that the following pair of equations are consistent and solve them graphically. $X+3y=6$ and $2x-3y=12$.

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24. Find the solution of $x+2y=10$ and $2x+4y=8$ graphically.

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25. Solve the following pair of linear equations graphically. $2x+y=4$ and $2x-3y=12$.

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26. 6 pencils and 4 notebooks together cost Rs. 90/- where as 8 pencils and 3 notebooks together cost Rs. 85/-. Find the cost of one pencil and that of one notebook.

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Creative Questions

1. Cost of Mathematics textbook is Rs. 10 less than twice of cost of English textbook. Write this in linear equaton.

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2. Solve the pair $2x+3y=12$ and $3x+2y=13$ in the elimination method.

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3. Solve the linear equations $2x+3y=12$ and $3x+2y=13$ by graph method.

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4. Say whether the solution for $2x+3y=12$ and $3x+2y=13$ is exist or not basing on the coefficients.

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5. Check whether the number of solutions of $2x+3y=12$ and $3x+2y=13$ are infinity or not. Give reasons.

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6. Solve $2x+3y=12$ and $3x+2y=13$ in the method of substitution.

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7. Why there exist infinite solutions to the straight line $2x+3y=12$?

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Given In The Public Examination

1. Which of the following equations is not a linear equation?

A. 5+4x=y+3

B. x+2y=y-x

C. $3 - x = y^2 + 4$

D. x+y=0

Answer: C

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2. Which of the following equations is not a linear equation?

A. 5+4x=y+3

B. x+2y=y-x

C. $3 - x = y^2 + 4$

D. $x+y=0$

Answer: C

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3. The pair of equations $4x+6y=7$ and $2x+3y=8$ has.....

A. unique solution

B. no solution

C. many solutions

D. Infinite number of solutions

Answer: B

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4. The point of intersecting of x+y=6 and x-y=4 is.....

A. (5,1)

B. (1,5)

C. (2,4)

D. 4,6)

Answer: A

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5. The graph y=ax+b is a straight line which intersects X-axis at

A. $\left(0, -\frac{b}{a}\right)$

B. (0,b)

C. $\left(-\frac{b}{a}, 0\right)$

D. (b,0)

Answer: C

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6. If the pair of equations $2x+3y+k=0$, $6x+9y+3=0$ having infinite solutions, the value of 'k' is.....

A. 2

B. 3

C. 0

D. 1

Answer: D

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7. The pair of equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ are consistent, then.....

A. $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$

B. $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

C. $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

D. A and C

Answer: D

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8. Which of the following equations has the solution (1,-1)?

A. 3x-2y=6

B. 3x+2y=6

C. 3x-2y=5

D. 3x+2y=5

Answer: C

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9. The line 2x-3y=8 intersects X-axis at.....

A. (2,-3)

B. (0,-3)

C. (2,0)

D. (4,0)

Answer: D

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10. If $6x+2y-9=0$ and $kx+y-7=0$ has no solution, then k=.....

A. 3

B. 2

C. -3

D. -2

Answer: A

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11. A pair of linear equations in two vairables are $2x-y=4$ and $4x-2y=6$.

The pair of equations are.....

A. Consistent

B. Dependent

C. Inconsistent

D. Cannot say

Answer: C

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12. Solution for the equations $\sqrt{3}x + \sqrt{5}y = 0$ and $\sqrt{7}x + \sqrt{11}y = 0$ is.....

A. x=3,y=5

B. x=7,y=11

C. x=1,y=1

D. x=0,y=0

Answer: D

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13. The value of 'x' in the equation $3x-(x-4)=3x+1$ is.....

A. -3

B. 0

C. 3

D. 10

Answer: C

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14. Which of the following is inconsistent equation to $2x+3y-5=0$?

A. $4x-6y-11$

B. $2x+y=5$

C. $x+3y=5$

D. $4x+6y-11=0$

Answer: D

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15. The value of k forf which the system of equations kx-y=2 and 6x-2y=3 has no solution, is.....

A. 3

B. $\neq 3$

C. $\neq 0$

D. 0

Answer: A

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Cce Model Examination

1. Which of the following pairs of equations represent inconsitent system?

A. $2x+3y=8$ and $5x-4y=3$

B. $6x+3y=9$ and $x-8y=0$

C. $2x+5y=11$ and $4x+10y=21$

D. $3x-4y=6$ and $6x-8y=12$

Answer: C

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2. For which value of k will the following pair of linear equations have no solution $3x+y=1$, $(2k-1)x+(k-1)y=2k-1$?

A. 1

B. 2

C. -2

D. -1

Answer: B

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3. If the lines given by 3x+2ky=2 and 2x+5y+1=0 are parallel, then the value of k is

A. $\frac{15}{4}$

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

C. $\frac{1}{4}$

D. $-\frac{3}{7}$

Answer: A

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4. The pair of linear equations 3x+4y+5=0 and 12x+16y+15=0 have.....

A. unique

B. many

C. two

D. No

Answer: D

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5. The pair of linear equations px+2y=5 and 3x+y=1 has unique solution if

A. $p \neq 6$

B. p=6

C. p-5

D. $p \neq 5$

Answer: A

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6. The pair of equations y=0 and y=-3 has

A. no solution

B. unique solution

C. many solutions

D. two solutions

Answer: A

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7. The lines represented by 8x+2py=2 and 2x+5y+1=0 are prarllel if p=

A. $\frac{-5}{4}$

B. $\frac{2}{7}$

C. 10

D. $\frac{3}{8}$

Answer: C

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8. The pair of equations 3x+2y=5, 2x-3y=7

A. Consistent

B. inconsistent

C. has infinite solutions

D. has unique solution

Answer: A

Watch Video Solution

9. Solve each pair of equation by using the substitution method. $\sqrt{2}x + \sqrt{3}y = 0$ and $\sqrt{3}x - \sqrt{8}y = 0$.

A. x=1,y=0

B. x=0,y=1

C. x=1,y=1

D. x=0,y=0

Answer: D

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10. The pair of equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ has unique solution, then.....

A. $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$

B. $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

C. $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

D. $\frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

Answer: A

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11. The age of a daughter is one third the age of her father. If the present age of father is x years, then the age of the daughter after 18 years is

A. $\frac{x+18}{3}$

B. $\frac{x}{3}-18$

C. x+18

D. $\frac{x}{3}+18$

Answer: D

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12. If x=1, then the value of y satisfying the equation $\frac{5}{x}+\frac{3}{y}=6$

A. 3

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

C. $-\frac{1}{3}$

D. 1

Answer: A

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13. The value of y when $\frac{x+y}{xy}=2$ and $\frac{x-y}{xy}=6$ is

A. $\frac{1}{4}$

B. $-\frac{1}{2}$

C. $-\frac{7}{4}$

D. $\frac{5}{4}$

Answer: A

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14. If ax+by=c and px+qy=r has unique solution, then

A. $\frac{a}{b}=\frac{p}{q}$

B. $ab=pq$

C. $\frac{a}{q} = \frac{b}{p}$

D. $aq \neq bp$

Answer: D

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15. If 5x+py+8=0 and 10x+15y+12=0 has no solution, then p=

A. $7\frac{1}{2}$

B. $6\frac{1}{2}$

C. 7

D. 4

Answer: A

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16. y =5x is a line

A. parallel to X-axis

B. parallel to Y-axis

C. parallel to x=5y

D. passes through the origion

Answer: D

 Watch Video Solution

17. x=7 is a line

A. parallel to X-axis

B. parallel to Y-axis

C. passes through the origion

D. passing through (0,7)

Answer: B

Watch Video Solution

18. The point (-3,-8) is in the .....quadrant

A. Q_1

B. Q_2

C. Q_3

D. Q_4

Answer: C

Watch Video Solution

19. The point (7,-5) is in the.....quadrant.

A. I

B. II

C. III

D. IV

Answer: D

Watch Video Solution

20. x-y=0,2x-y=2, then y=

A. 1

B. 2

C. 0

D. -2

Answer: B

Watch Video Solution

21. The larger of two supplementary angles exceeds the smaller by 38°. Find them.

A. $71^\circ, 108^\circ$

B. $72^\circ, 108^\circ$

C. $109^\circ, 71^\circ$

D. $142^\circ, 38^\circ$

Answer: C

Watch Video Solution

22. Find the value of x if $y = \frac{3}{4}x$ and 5x+8y=33.

A. 2

B. 3

C. 4

D. -3

Answer: B

Watch Video Solution

23. Which of the following is not a solution of the equation 2a+3b=5?

A. (1,1)

B. (-2,3)

C. (4,-1)

D. (1,7)

Answer: D

Watch Video Solution

24. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{2}{x}+\frac{3}{y}=13$ and $\frac{5}{x}-\frac{4}{y}=-2$ where $x \neq 0, y \neq 0$.

A. $\left(\frac{-1}{2}, \frac{-1}{3}\right)$

B. $\left(\frac{-1}{2}, \frac{1}{3}\right)$

C. $\left(\frac{1}{3}, \frac{1}{2}\right)$

D. $\left(\frac{1}{2}, \frac{1}{3}\right)$

Answer: D

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25. $\frac{120}{x} + \frac{12}{x} = 11$, then x=

A. 132

B. 11

C. 12

D. 13

Answer: C

Watch Video Solution

26. The graph of a pair of linear equations in two variables is represented by.....

A. Straight lines

B. curves

C. triangles

D. none

Answer: A

Watch Video Solution

27. The graph of a pair of linear equations such that $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ in two variables in represented by.....

A. intersecting lines

B. two triangles

C. circles

D. two parallel lines

Answer: D

Watch Video Solution

28. The graph of two linear equations such that $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ is represented by.....

A. parallel lines

B. two intersecting lines

C. circles

D. none

Answer: B

Watch Video Solution

29. $500x + 240y = 8, 130x + 240y = \frac{43}{10}$ then x=.....

A. $\frac{9}{200}$

B. $\frac{7}{20}$

C. $\frac{1}{100}$

D. $\frac{1}{10}$

Answer: C

Watch Video Solution

30. In the above problem a_5=...

A. 1

B. 0

C. 10

D. none

Answer: D

Watch Video Solution

31. Solution to $\frac{a^2}{x} - \frac{b^2}{y} = 0, \frac{a^2 b}{x} + \frac{b^2 a}{y} = a + b, x \neq 0, y \neq 0$ is.....

A. $(-a^2, -b^2)$

B. (a, b^2)

C. $(a, -b)$

D. (a^2, b^2)

Answer: D

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32. Sita has pencils and pens which are together 40 in number. If she has 5 less pencils and 5 more pens the number of pens become four times the number of pencils. Represent this situation in a linear equation form.

A. x-y=40

B. x+y=40

C. x-y=7

D. all

Answer: B

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33. If $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ then the lines are.....lines.

A. parallel

B. intersecting

C. coincident

D. none

Answer: C

Watch Video Solution

34. The lines represented by $5x+7y-14=0$ and $10x+3y-8=0$ are ..... lines.

A. coincident

B. vertical

C. parallel

D. consistent

Answer: D

Watch Video Solution

35. The standard form of a linear equations is.....

A. $xa+y=0$

B. ax+by

C. ax+b=0

D. ax+by+c=0

Answer: D

Watch Video Solution

36. The lines 3x+8y-13=0 and -6x-16y+23=0 are.....lines.

A. coincident

B. parallel

C. circular

D. none

Answer: B

Watch Video Solution

37. The lines represented by $5x+3y-7=0$ and $6y+10k-14=0$ are.....lines.

A. coincident

B. parallel

C. intersecting

D. none

Answer: A

Watch Video Solution

38. The pairs of equations $4x-2y+6=0$ and $2x-y+8=0$ has.....solutions.

A. 1

B. 12

C. no solution

D. 10

Answer: C

Watch Video Solution

39. The number of solutions to the pair of equations 6x-7y+8-0 and 12x-14y+10=0 is.....

A. 1

B. 20

C. 3

D. no

Answer: D

Watch Video Solution

40. The number of solutions to the pair of equations 11x-7y=6 and 4x+9y=8 is.....

A. 4

B. 3

C. 7

D. 1

Answer: D

Watch Video Solution

41. If the pair of equations kx+14y+8=0 and 3x+7y+6=0 has a unique solution then.....

A. $k \neq 6$

B. k=0

C. k=7

D. none

Answer: A

Watch Video Solution

42. $a_1x + b_1y + c_1 = 0$ and $a_2x + b_\circ y + c_2 = 0$ are.....equations.

A. parallel

B. pair of linear

C. consistent

D. None

Answer: B

Watch Video Solution

43. If $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ then the lines will have.....solutions.

A. infinite

B. 2

C. 3

D. 7

Answer: A

Watch Video Solution

44. 3x-2y+6=0,6x-4y+8=0 represents.....lines.

A. consitant

B. inconsistent

C. circle

D. parallel

Answer: D

Watch Video Solution

45. 5x-2y-10=0,10x-4y-20=0 these are.....lines.

A. coincident

B. parallel

C. intersecting

D. None

Answer: A

Watch Video Solution

46. The number of solutions to 4x+6y-7=0 and 8x+5y-8=0 is.....

A. 14

B. 3

C. 4

D. 1

Answer: D

Watch Video Solution

47. $\frac{2}{x}+\frac{3}{y}=2, \frac{12}{x}-\frac{9}{y}=3$ then x=.....

A. 1

B. 4

C. 2

D. None

Answer: C

Watch Video Solution

48. In the above problem a_5=...

A. 2

B. -1

C. 7

D. 3

Answer: D

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49. The lines x=5y passes through.....

A. (1,1)

B. (2,3)

C. (0,9)

D. (0,0)

Answer: D

Watch Video Solution

50. Solve the following equations:

$2^x + 3^y = 17$ and $2^{x+2} - 3^{y+1} = 5$

A. 2

B. 3

C. 1

D. 7

Answer: A

Watch Video Solution

51. In the above problem a_5=...

A. 2

B. 4

C. 3

D. None

Answer: C

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52. Solve the following equations: $\frac{ax}{b} - \frac{by}{a} = a + b$, ax-by=2ab.

A. 3b

B. $\frac{-3}{b}$

C. 1

D. $-2a$

Answer: A

Watch Video Solution

53. If a = 0 then the equation $\frac{x - a - 1}{x - a} = (a + 1) - \frac{1}{x - a}$ has

A. 2a

B. $-a^2$

C. $3b - a$

D. $3A$

Answer: A

Watch Video Solution

54. Slope of the line ax+by+c=0 is.....

A. $\frac{b}{a}$

B. $\frac{1}{a}$

C. $\frac{a}{b}$

D. $\frac{-a}{b}$

Answer: D

Watch Video Solution

55. The line ax+by+c=0 does not passes through.....

A. (0,0)

B. (a,0)

C. both A & B

D. None

Answer: C

Watch Video Solution

56. If x+y=7,x-y=1 then 2x =.....

A. 3

B. 4

C. 7

D. 8

Answer: D

Watch Video Solution

57. In the above problem a_5=...

A. 3

B. 7

C. 1

D. 4

Answer: A

Watch Video Solution

58. Slope of the line y=x is.....

A. 2

B. -1

C. 1

D. None

Answer: C

Watch Video Solution

59. The line x=2015 is.....

A. slope not difined

B. parallel to Y-axis

C. both A & B

D. none

Answer: C

Watch Video Solution

60. $x + \frac{6}{y} = 6, 3x - \frac{8}{y} = 5$ then y=.....

A. -2

B. 4

C. 1

D. 2

Answer: D

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61. In the above problem x=.....

A. 3

B. 2

C. -1

D. 9

Answer: A

View Text Solution

62. 3x-5y=-1,-y+x=-1 then (x,y)=.....

A. (-2,-1)

B. (2,-1)

C. (1,2)

D. None

Answer: A

Watch Video Solution

63. The graph of 3x-y=-1.....

A. circle

B. straight line

C. curve

D. none

Answer: B

Watch Video Solution

64. The value of y in -5x+10y=100 at x=0 is.....

A. 12

B. 9

C. -10

D. 10

Answer: D

Watch Video Solution

65. If x+y=36, then at y=-1,x=.....

A. 38

B. 37

C. 80

D. 12

Answer: B

Watch Video Solution

66. x+y=10,x-y=-4 then x=.....

A. 4

B. 3

C. 5

D. none

Answer: B

Watch Video Solution

67. Present ages of Sameer and Anand are in the ratio of 5 : 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Anand's present age in years?

Watch Video Solution

68. Solution to 2x-2y-2=0, 4x-4y-5=0 is.....

A. (1,4)

B. (2,-1)

C. $\left(8, -\frac{1}{4}\right)$

D. No solution

Answer: D

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69. The two lines 2x+y-6=0 and 4x-2y-4=0 intersect at.....

A. (2,2)

B. (3,2)

C. (1,-4)

D. (1,1)

Answer: A

Watch Video Solution

70. Solution to x-y=1, 2x-2y=7 is.....

A. (1,1)

B. (1,9)

C. (8,4)

D. No solution

Answer: D

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71. $\left(2, \frac{-1}{4}\right) \in$ .....

A. Q_4

B. Q_3

C. Q_2

D. Q_1

Answer: A

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72. $If Q_1 = \{1, 2, 5, 6\}$ and $Q_2 = \{3, 4, 9, 10\} Q_1 \cap Q_2$=.....

A. { }

B. {1,2,3}

C. {8,9}

D. none

Answer: A

Watch Video Solution

73. Perimeter of rectangle =.....

A. l+b

B. l-b

C. 2(l+b)

D. $\frac{l+b}{2}$

Answer: C

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74. x+y=2015 has ..... Number of solutions.

A. 10

B. 2014

C. 20

D. infinite

Answer: D

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75. px+3y-(p-3)=0, 12x+py-p=0 has infinitely many solutions then p=.....

A. 7

B. 9

C. ± 71

D. ± 6

Answer: D

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76. For what value of 'k', the pair of equation 3x+4y+2=0 and 9x+12y+k=0 represent coincident lines.

A. 12

B. 9

C. 6

D. 7

Answer: C

Watch Video Solution

77. 2x+3y=1,3x-y=7 then (x,y)=.....

A. (2,-1)

B. (-2,1)

C. $\left(8, \frac{1}{4}\right)$

D. `(0,3)

Answer: A

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78. If 7x-8y=9, then y=.....

A. $9 + 7x$

B. $\frac{7x - 9}{8}$

C. $\frac{9-7x}{6}$

D. none

Answer: B

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79. Slope of the line x=2y is.....

A. 2

B. -2

C. 1

D. $\frac{1}{2}$

Answer: D

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80. Slope of X-axis is .....

A. 0

B. 1

C. -1

D. 2

Answer: A

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81. Angle between any two parallel lines is .....

A. 70°

B. 0°

C. 100°

D. 180°

Answer: B

Watch Video Solution

82. 4m-2n=2,6m-5n=9 then n=.....

A. 5

B. 4

C. 1

D. -3

Answer: D

Watch Video Solution

83. A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, then how old is B?

A. 7

B. 8

C. 9

D. 10

Answer: D

Watch Video Solution

84. 2u+3v=2,4u-6v=0 then v=.....

A. $\frac{1}{2}$

B. 1

C. $\frac{1}{31}$

D. $\frac{1}{3}$

Answer: D

Watch Video Solution

85. If $0.\overline{35}$ is expressed in the form of $\frac{p}{q}$ the value of p+q is

A. $\frac{1}{21}$

B. $\frac{1}{2}$

C. 2

D. 4

Answer: B

Watch Video Solution

86. Area of rectangle =.....

A. l^2b

B. $\frac{l}{b}$

C. lb

D. none

Answer: C

Watch Video Solution

87. $\frac{x+3}{2} - y = 2, \frac{x-3}{2} + 2y - 4\frac{1}{2}$ then x=.....

A. 1

B. 4

C. 51

D. none

Answer: D

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88. The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child?

A. 4 years

B. 8 years

C. 10 years

D. none

Answer: A

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89. If ax+b=0, then x=.....

A. $-b$

B. $-\frac{b}{a}$

C. $\frac{b}{a}$

D. none

Answer: B

Watch Video Solution

90. 2x-3y=-12 then at x=0, y=.....

A. 4

B. 6

C. 8

D. 12

Answer: A

Watch Video Solution

91. Two parallel lines differ by.....

A. circle

B. triangles

C. constant

D. none

Answer: C

Watch Video Solution

92. x=1 and y=$-\frac{1}{2}$ then x-y=.....

A. -1

B. 1

C. $-\frac{1}{2}$

D. $\frac{3}{2}$

Answer: D

Watch Video Solution

93. If 99x+101y=499,101x+99y=501 then x=.....

A. -1

B. 3

C. 4

D. 2

Answer: B

Watch Video Solution

94. Father is aged three times more than his son Ronit. After 8 years, he would be two and a half times of Ronit's age. After further 8 years, how many times would he be of Ronit's age?

A. 2 times

B. 2 1/2 times

C. 2 3/4 times

D. 3 times

Answer: A

Watch Video Solution

95. 141x+93y=189,93x+141y=45 then y=.....

A. -1

B. 4

C. 2

D. 3

Answer: A

Watch Video Solution

96. In the above problem a_5=...

A. 3

B. 4

C. 1

D. 2

Answer: D

Watch Video Solution

97. If -x-y=-10, then x=.....

A. $y-3$

B. y^2-1

C. $y-10$

D. $-y+10$

Answer: D

Watch Video Solution

98. $(-a, -b) \in$ .....

A. Q_2

B. Q_3

C. Q_1

D. Q_4

Answer: B

Watch Video Solution

99. (2,0) lines on.....

A. Q_1

B. Q_2

C. x-axis

D. y-axis

Answer: C

Watch Video Solution

100. The line x-y=8 intersect X-axis at.....

A. (2,3)

B. (1,1)

C. (0,8)

D. (8,0)

Answer: D

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101. The values of k for which the pair of linear equations 3x-2y=7 and 6x+ky+11=0 has a unique solution is .....

A. all numbers except 4

B. all numbers except -4

C. 4

D. -4

Answer: B

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102. The pair of linear equations -3x+4y=7 and $\frac{9}{2}x - 6y + \frac{21}{2} = 0$ has.....

A. infinite number of solutions

B. no solution

C. two solutions

D. unique solution

Answer: A

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103. If $ad \neq bc$ then the pair of linear equations ax+by=p and cx+dy=q has.....solutions.

A. no

B. unique

C. 2

D. none

Answer: B

Watch Video Solution

104. A line parallel to the line x+2y+1=0 is.....

A. $x + y + 3 = 0$

B. $2x + 4y + 1 = 0$

C. $x - y + 1 = 0$

D. all

Answer: B

Watch Video Solution

105. The pair of equations x=3,y=2 graphically represent lines which.....

A. intersect at (3,2)

B. intersect at (4,3)

C. parallel

D. coincident

Answer: A

Watch Video Solution

106. If the pair of equations 2x+y=7 and 6x-py-21=0 has infinite number of solutions then p=.....

A. 3

B. 4

C. 5

D. none

Answer: D

Watch Video Solution

107. The value of k for which the system of equations kx+3y=1, 12x+ky=2 has no solution is.....

A. $k = -1$

B. $k = 3$

C. $k = 2$

D. $k = -6$

Answer: D

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108. The line 3x+y=7 intersects X-axis at.....

A. $\left(\frac{7}{3}, 0\right)$

B. $\left(0, \frac{7}{2}\right)$

C. $(0, 1)$

D. (0,3)

Answer: A

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109. For what value of k, 2x+3y=4 and (k+2)x+6y=3k+2 will have infinitely many solutions?

A. $k = -1$

B. $k = 2$

C. $k = 7$

D. none

Answer: B

Watch Video Solution

110. $\frac{x+1}{2} + \frac{y+1}{3} = 9, \frac{x-1}{3} + \frac{y+1}{2} = 8$ then x=.....

A. $\frac{53}{5}$

B. 17

C. -3

D. 10

Answer: A

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111. In the above problem height=___cm.

A. 4

B. -3

C. 9

D. 7

Answer: D

Watch Video Solution

112. If the equations (2m-1)x+3y-5=0, 3x+(n-1)y-2=0 has Infinlte num. ber of solutions then n=.....

A. 1

B. $\frac{5}{11}$

C. $\frac{1}{5}$

D. $\frac{11}{5}$

Answer: D

Watch Video Solution

113. In the above problem a_5=...

A. $\frac{17}{4}$

B. $\frac{7}{4}$

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

D. $\frac{8}{3}$

Answer: A

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114. A fraction becomes $\frac{9}{11}$ if 2 is added to both numerator and denominator. If 3 is added to both numerator and denominator It bevomes $\frac{5}{6}$ Then the fraction is .....

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

B. $\frac{1}{2}$

C. $\frac{9}{7}$

D. $\frac{7}{9}$

Answer: D

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115. The ration of incomes of two persons is 11: 7 and the ration of their expenditurca is 9 :5, if each of them manages to save Rs400 per month then the monthly income of first person is .....

A. Rs 2200

B. Rs 1200

C. Rs 800

D. Rs 1010

Answer: A

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116. The ratio of incomes of two persons is 9:7 and the ratio of their expenditures is 4:3. If each of them saves Rs 200 per month, find

monthly income of second person is.....

A. Rs 8001

B. Rs 1100

C. Rs. 1400

D. Rs. 4100

Answer: C

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117. The age of a father 8 years ago was 5 times that of his son 8 years. Hence, his age will be 8 years more than twice the age of his son. Then the present age of fatherd is .....years.

A. 80

B. 92

C. 24

D. 48

Answer: D

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118. A father is 30 years older than his son.One year ago he was 4 times as old as his son.Find their present ages

Watch Video Solution

119. The two lines 2x-y=1,x+2y=13 will intersect at .....

A. (5,3)

B. (3,5)

C. (1,3)

D. (3,9)

Answer: B

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120. Identity parallel lines

A. $2x + 3y = 6, 8x + 12y = 9$

B. $x + y = 7, x - y = 1$

C. $2x + y = 7, 3x - y = 7$

D. all

Answer: A

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121. Solution to $2x+3y=12, 2y-1=x$ is.....

A. (8,-1)

B. (3,8)

C. (3,2)

D. (1,-1)

Answer: C

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122. The lines $x-y=1$, $2x+y=8$ intersect at .....

A. (1,9)

B. (9,3)

C. (3,4)

D. none

Answer: D

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123. If $\frac{5}{x-1}+\frac{1}{y-2}=2, \frac{6}{x-1}+\frac{-3}{y-2}=1$ then x=.....

A. 4

B. 7

C. -1

D. 3

Answer: A

Watch Video Solution

124. Sachin is younger than Rahul by 7 years. If their ages are in the respective ratio of 7 : 9, how old is Sachin?

A. 16 years

B. 18 years

C. 28 years

D. 24.5

Answer: D

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Exercise

1. The cost of 1kg potatoes and 2 kg tomatoes was Rs. 30 on a certain day. After two days, the cost of 2 kg potatoes and 4 kg

tomatoes was found to be Rs. 66.Identify the unknowns in each situation. We observe that there are two unknowns in each case.

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2. The coach of a cricket team of M.K.Nagar High School buys 3 bats and 6 balls for Rs. 3900. Later he buys one more bat and 2 balls for Rs. 1300. Identify the unknowns in each situation. We observe that there are two unknowns in each case.

Watch Video Solution

3. Is a dependent pair of linear equations always consistent? Why or why not?

Watch Video Solution

4. Which of the following equations is not a linear equation?

A. $5 + 4x = y + 3$

B. $x + 2y = y - x$

C. $3 - x = y^2 + 4$

D. $x + y = 0$

Answer:

Watch Video Solution

5. Which of the following is a linear equation in one variable?

A. $2x + 1 = y - 3$

B. $2t - 1 = 2t + 5$

C. $2x - 1 = x^2$

D. $x^2 - x + 1 = 0$

Answer:

Watch Video Solution

6. Which of the following numbers is a solution for the equation $2(x+3)=18$?

A. 5

B. 6

C. 13

D. 21

Answer:

Watch Video Solution

7. The value of x which satisfies the equation 2x-(4-x)=5-x is

A. 4.5

B. 3

C. 2.25

D. 0.5

Answer:

Watch Video Solution

8. The equation x-4y=5 has

A. no solution

B. unique solution

C. two solution

D. Infinitely many solution

Answer:

Watch Video Solution

9. In the example given above, can you find the cost of each bat and ball?

Watch Video Solution

10. For what value of 'p' the following pair of equations has a unique solution. $2x+py=-5$ and $3x+3y=-6$.

Watch Video Solution

11. Find the value of 'k' for which the pair of equations $2x-ky+3=0$, $4x+6y-5=0$ represent parallel lines.

Watch Video Solution

12. For what value of 'k', the pair of equation 3x+4y+2=0 and 9x+12y+k=0 represent coincident lines.

Watch Video Solution

13. For what positive values of 'p' the folllowing pair of linear equations have infinitely many solutions?

$px + 3y - (p - 3) = 0, 12x + py - p = 0$

Watch Video Solution

14. Represent the following systems of equations graphically and comment on solutions $x - 2y = 0, 3x + 4y = 20$

Watch Video Solution

15. Solve the following systems of equations:

x+y=2, 2x+2y=4.

Watch Video Solution

16. Solve the following systems of equations:

2x-y=4, 4x-2y=6.

Watch Video Solution

17. Represent the pair of linear equations $x + 2y - 4 = 0$ and $2x + 4y - 12 = 0$ graphically and comment on solutions.

Watch Video Solution

18. Check each of the given sustems of equations to see if has a unique solution, infinitely many solutions or no solution. Solve them graphically.

$2x+3y=1$, $3x-y=7$.

Watch Video Solution

19. Check each of the given sustems of equations to see if has a unique solution, infinitely many solutions or no solution. Solve them graphically.

$x+2y=6$, $2x+4y=12$.

Watch Video Solution

20. Check each of the given sustems of equations to see if has a unique solution, infinitely many solutions or no solution. Solve them

graphically.

3x+2y=6, 6x+4y=18.

Watch Video Solution

21. Check whether the given pair of equations represent intersecting, parallel or coincident lines. Find the solution if the equations are consistent. $2x + y - 5 = 0, 3x - 2y - 4 = 0$

Watch Video Solution

22. Check whether the following pair of equations is consistent. 3x+4y=2 and 6x+8y=4 Varify by a graphical representation.

Watch Video Solution

23. Check whether the equations $2x-3y=5$ and $4x-6y=15$ are consistent. Also verify by graphical representation.

Watch Video Solution

24. In a garden there are some bees and flowers. If one bee sits on each flower, then one bee will be left. If two bees sit on each flower, once flower will be left. Find the number of bees and number of flowers.

Watch Video Solution

25. The perimeter of a rectangular plot is 32m. If the length is increased by 2m and the breadth is decreased by 1m, the area of the plot remains the same. Find the length and breadth of the plot.

Watch Video Solution

26. By comparing the ratios $\frac{a_1}{a_2}, \frac{b_1}{b_2}, \frac{c_1}{c_2}$, find out whether the represented by the following pairs of linear equations intersect at a point, are parallel or are coincident. 5x-4y+8=0, 7x+6y-9=0.

Watch Video Solution

27. By comparing the ratios $\frac{a_1}{a_2}, \frac{b_1}{b_2}, \frac{c_1}{c_2}$, find out whether the represented by the following pairs of linear equations intersect at a point, are parallel or are coincident. 9x+3y+12=0 , 18x+6y+24=0.

Watch Video Solution

28. By comparing the ratios $\frac{a_1}{a_2}, \frac{b_1}{b_2}, \frac{c_1}{c_2}$, find out whether the represented by the following pairs of linear equations intersect at a point, are parallel or are coincident. 6x-3y+10=0 , 2x-y+9=0.

Watch Video Solution

Watch Video Solution

29. Check whether the following equations are consistent or inconsistent. Solved them graphically. $3x + 2y = 5, 2x - 3y = 7$

Watch Video Solution

30. Check whether the following equations are consistent or inconsistent. Solve them graphically.

2x-3y=8 , 4x-6y=9.

Watch Video Solution

31. Check whether the following equations are consistent or inconsistent. Solve them graphically.

$\frac{3}{2}x + \frac{5}{3}y = 7$, 9x-10y=12.

Watch Video Solution

32. Check whether the following equations are consistent or inconsistent. Solve them graphically.

5x-3y = 11, -10x+6y = -22

Watch Video Solution

33. Check whether the following equations are consistent or inconsistent. Solve them graphically.

$\frac{4}{3}x + 2y = 8, 2x + 3y = 12$

Watch Video Solution

34. Check whether the following equations are consistent or inconsistent. Solve them graphically.

x+y=5 , 2x+2y=10.

Watch Video Solution

35. Check whether the following equations are consistent or inconsistent. Solve them graphically.

x-y=8 , 3x-3y=16.

Watch Video Solution

36. Check whether the following equations are consistent or inconsistent. Solve them graphically.

2x+y-6=0 and 4x-2y-4=0.

Watch Video Solution

37. Check whether the following equations are consistent or inconsistent. Solve them graphically.

2x-2y-2=0 and 4x-4y-5=0.

Watch Video Solution

38. Neha went to a 'sale' to purchase some pants and skirts. When her friend asked her how many of each she had bought, she answered "The number of skirts are two less than twice the number of pants purchased. Also the number of skirts is four less than four times the number or pants purchased." Help her friends to find how many pants and skirts Neha bought.

Watch Video Solution

39. 10 students of Class-X took part in a mathematics quiz. If the number of girls in 4 more than the number of boys then, find the number of boys and the number of girls who took part in the quiz.\

Watch Video Solution

40. 5 pencils and 7 pens together cost Rs. 50 where as 7 pencils and 5 pens together cost Rs. 46. Find the cost of one pencil and that of one pen.

Watch Video Solution

41. Half the perimeter of a rectangular garden, whose length is 4m more than its width, is 36m. Find the dimensions of the garden.

Watch Video Solution

42. We have a linear quations $2x + 3y - 8 = 0$. Write another linear equation in two variables x and y such that the geometrical representation of the pair so formed is intersecting lines.

Now, write two more linear equations so that one forms a pair of

parllel lines and the second forms coincident line with the given equation.

Watch Video Solution

43. The area of a rectangle gets reduced by 80 sq. units if its length is reduced by 5 units and breadth is increased by 2 units. If we increase the length by 10 units and decrease the breadth by 5 units, the area will increase by 50 sq. units. Find the length and breadth of the rectangle.

Watch Video Solution

44. In X class, if three students sit on each bench, one student will be left. If four students sit on each bench, one bench will be left. Find the number of students and the number of benches in that class.

Watch Video Solution

45. Solve the given pair of equations using substitution method. $2x-y=5, 3x+2y=11$

Watch Video Solution

46. Solve the following pair of linear equations using elimination method. $3x+2y=11, 2x+3y=4$

Watch Video Solution

47. Rubina went to a bank to withdraw Rs. 2000. She asked the cashier to give the cash in Rs. 50 and Rs. 100 notes only. She got 25 notes in all. Can you tell how many notes each of Rs. 50 and Rs. 100 she received?

Watch Video Solution

48. In a competitive exam, 3 marks are to be awarded for every correct answer and for every wrong answer, 1 mark will be deducted. Madhu scored 40 marks in this exam. Had 4 marks been awarded for each correct answer and 2 marks deducted for each incorrect answer, Madhu would have scored 50 marks. How many questions were three in the test?

Watch Video Solution

49. Mary told her daughter, "Seven years ago, I was seven times as old as you were then. Also, three years from now, I shall be three times as old as you will be." Find the present age of Mary and her daughter.

Watch Video Solution

50. A publisher is planning to produce a new textbook. The fixed costs are Rs. 320000 per book. Besides that, he also spends another Rs. 31.25 in producing the book. The wholesale price is Rs. 43.75 per book. How many books must the publisher sell to break even,i.e., so that the cost of production will equal revenues?

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51. Solve each pair of equation by using the substitution method. 3x-5y=-1 and x-y=-1.

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52. Solve each pair of equation by using the substitution method. $x + 2y = -1$ and 2x-3y=12.

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53. Solve each pair of equation by using the substitution method.

2x+3y=9 and 3x+4y=5.

Watch Video Solution

54. Solve each pair of equation by using the substitution method.

$x + \frac{6}{y} = 6$ and $3x - \frac{8}{y} = 5$.

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55. Solve each pair of equation by using the substitution method.

0.2x+0.3y=1.3 and 0.4x+0.5y=2.3.

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56. Solve each pair of equation by using the substitution method. $\sqrt{2}x + \sqrt{3}y = 0$ and $\sqrt{3}x - \sqrt{8}y = 0$.

Watch Video Solution

57. Solve each of the following pairs of equations by the elimination method. 8x+5y=9 and 3x+2y=4.

Watch Video Solution

58. Solve each of the following pairs of equations by the elimination method. 2x+3y=8 and 4x+6y=7.

Watch Video Solution

59. Solve each of the following pairs of equations by the elimination method. $3x+4y=25$ and $5x-6y=-9$.

Watch Video Solution

60. In a competitive exam, 3 marks are to be awarded for every correct answer and for every wrong answer, 1 mark will be deducted. Madhu scored 40 marks in this exam. Had 4 marks been awarded for each correct answer and 2 marks deducted for each incorrect answer, Madhu would have scored 50 marks. How many questions were three in the test?

Watch Video Solution

61. Mary told her daughter, "Seven years ago, I was seven times as old as you were then. Also, three years from now, I shall be three

times as old as you will be." Find the present age of Mary and her daughter.

Watch Video Solution

62. Solve the given pair of linear equations. $(a-b)x+(a+b)y=a^2-2ab-b^2$ and $(a+b)(x+y)=a^2+b^2$

.

Watch Video Solution

63. The ratio of incomes of two persons is 9:7 and the ratio of their expenditures is 4:3. If each of them saves Rs 200 per month, find monthly income of second person is.....

Watch Video Solution

64. The sum of two digit number and the number obtained by reversing the digits is 66. If the digits of the number differ by 2, Find the number. How many such numbers are there?

Watch Video Solution

65. The larger of two supplementary angles excceds the smaller by 18°. Find the angles.

Watch Video Solution

66. The text charges in Hyderabad are fixed, along with the charge for the distance covered. For a distance of 10 km, the charge paid is Rs. 220. For a journey of 15 km, the charge paid is Rs. 310.

What are the fixed charges and charge per km?

Watch Video Solution

67. The texi charges in Hyderabad are fixed, along with the charge for the distance covered. For a distance of 10 km, the charge paid is Rs. 220. For a journey of 15 km, the charge paid is Rs. 310.

How much does a person have to pay for travelling a distance of 25 km?

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68. A fraction becomes equal to $\frac{4}{5}$ if 1 is added to both numerator and denominator. If, however, 5 is subtracted from both numerator and denominator, the fraction becomes equal to $\frac{1}{2}$. What is the fractions?

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69. Places A and B are 100 km apart on a highway. One car starts from A and another from B at the same time at different speeds. If the caras travel in the same direction, they meet in 5 hours. If they travel towards each other, they meet in 1 hour. What are the speeds of the two cars?

Watch Video Solution

70. Two angles are complementary. The larger angle is 3° less than twice the measure of the smaller angle. Find the measure of each angle.

Watch Video Solution

71. An algebra textbook has a total of 1382 pages. It is broken up into two parts. The second part of the book has 64 pages more than

the first part. How many pages are in each part of the book?

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72. A chemist has two solutions of hydrochloric acid in stock. One is 50% solution and the other is 80% solution. How much of each should be used to obtain 100 ml of a 68% solution?

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73. Suppose you have Rs. 12000 to invest. You have to invest some amount at 10% and the rest at 15%. How much should be invested at each rate to yield 12% on the total amount invested?

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74. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{2}{x}+\frac{3}{y}=13$ and $\frac{5}{x}-\frac{4}{y}=-2$ where $x \neq 0, y \neq 0$.

Watch Video Solution

75. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{10}{x+y}+\frac{2}{x-y}=4$ and $\frac{15}{x+y}-\frac{5}{x-y}=-2$

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76. Kavitha thought of constructing 2 more rooms in her house. She enquired about the labour. She came to know that 6 men and 8 women could finish this work in 14 days. But she wish to complete that work in only 10 days. When she enquired, she was told that 8

men and 12 women could finish the work in 10 days. Find out the how much time would be taken to finish the work if one man or one woman worked alone.

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77. A man travels 370 km partly by train and partly by car. If he covers 250 km by train and the rest by car, it takes him 4 hours. But if he travels 130 km by train and the rest by car, it takes 18 minutes more. Find the speed of the train and that of the car.

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78. Solve each of the following pairs of equations by reducing them to a pair of linear equations.

$$\frac{5}{x-1}+\frac{1}{y-2}=2 \text{ and } \frac{6}{x-1}-\frac{3}{y-2}=1.$$

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79. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{x+y}{xy}=2, \frac{x-y}{xy}=6$

Watch Video Solution

80. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{2}{\sqrt{x}}+\frac{3}{\sqrt{y}}=2$ and $\frac{4}{\sqrt{x}}-\frac{9}{\sqrt{y}}=-1$

Watch Video Solution

81. Solve each of the following pairs of equations by reducing them to a pair of linear equations. 6x+3y=6xy and 2x+4y=5xy.

Watch Video Solution

82. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{5}{x+y}-\frac{2}{x-y}=-1$ and $\frac{15}{x+y}+\frac{7}{x-y}=10$ where $x \neq 0, y \neq 0$.

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83. Solve each of the following pairs of equations by reducing them to a pair of linear equations. 6x+3y=6xy and 2x+4y=5xy.

Watch Video Solution

84. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{10}{x+y}+\frac{2}{x-y}=4$ and $\frac{15}{x+y}-\frac{5}{x-y}=-2$

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85. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{1}{3x+y}+\frac{1}{3x-y}=\frac{3}{4}$ and $\frac{1}{2(3x+y)}-\frac{1}{2(3x-y)}=\frac{-1}{8}$.

Watch Video Solution

86. Formulate the following problem as a pair of equations and then find their solutions.

A boat goes 30 km upstream and 44 km downstream in 10 hours. In 13 hours it can go 40 km upstream and 55 km downstream. Determine the speed of the stream and that of the boat in still water.

Watch Video Solution

87. Formulate the following problem as a pair of equations and then find their solutions.

Rahim travels 600 km to his home partly by train and partly by car. He takes 8 hours If he travels 120 km by train and rest by car. He takes 20 minutes more if he travels 200 km by train and rest by car. Find the speed of the train and the car.

Watch Video Solution

88. Formulate the following problem as a pair of equations and then find their solutions.

2 women and 5 men can together finish an embroidery work in 4 days while 3 women and 6 men can finish it in 3 days. Find the time taken by 1 women alone and 1 man alone to finish the work.

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89. Solve the following equations: $\frac{2x}{a} + \frac{y}{b} = 2$ and $\frac{x}{a} - \frac{y}{b} = 4$

Watch Video Solution

90. Solve the following equations:

$$\frac{x+1}{2}+\frac{y-1}{3}=8 \text{ and } \frac{x-1}{3}+\frac{y+1}{2}=9$$

Watch Video Solution

91. Solve the following equations: $\frac{x}{7}+\frac{y}{3}=5, \frac{x}{2}-\frac{y}{9}=6.$

Watch Video Solution

92. If 'a' and 'b' are rational numbers, find the value of a and b in each of the following equations.

$$\frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}=a+b\sqrt{6}$$

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93. Solve the following equations: $\frac{ax}{b} - \frac{by}{a} = a + b$, ax-by=2ab.

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94. Solve the following equations:

$2^x + 3^y = 17$ and $2^{x+2} - 3^{y+1} = 5$

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95. Animals in an experiment are to be kept on a strict diet. Each animal is to among other things 20g of protein and 6g of fat. The laboratory technicians purchased two food mixes. A and B. Mix A has 10% protein and 6% fat. Mix B has 20% protein and 2% fat. How many grams of each mix should be used?

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96. For what value of k, the following system of equations has a unique solution? $x - ky = 2, 3x + 2y = -5.$

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97. For what value of m the following system of equations will have a unique solution ? $3x + my = 10 \text{ and } 9x + 12y = 30$

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98. Show that the pair of linear equations 7x+y=10 and x+7y=10 are consistent.

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99. Write the condition for the pair of linear equations in two variables to be parallel lines.

Watch Video Solution

100. If x=a and y= b is solution for the pair of equations x-y=2 and x+y=4, then find the values of a and b.

Watch Video Solution

101. For what value of 'p' the following pair of equations has a unique solution. 2x+py=-5 and 3x+3y=-6.

Watch Video Solution

102. Whether the following pair of linear equations are parallel? Justify. $6x - 4y + 10 = 0, 3x - 2y + 6 = 0$

Watch Video Solution

103. Sove the following pair of linear equations by substitution method. 2x-3y=19 and 3x-2y=21.

Watch Video Solution

104. Given the linear equations 3x+4y=11, write linear equations in two variables such that the their geometrical representations from parallel lines and intersecting lines.

Watch Video Solution

105. Solve the pair of linear equations $2x + 3y = 8$ and $x + 2y = 5$ by Elimination method.

Watch Video Solution

106. For what value of 'm' in the following, $mx + 4y = 10$ and $9x + 12y = 30$ system of equations will have no solution ? Why ?

Watch Video Solution

107. Draw the graphs of the following equations 3x-y-2=0 and 2x+y-8=0 on the graph paper.

Watch Video Solution

108. Draw the graph for the following pair of linear equation in two variables and find their solution from the graph. $3x-2y=2$ and $2x+y=6$.

Watch Video Solution

109. Draw the graph for the equations $2x-y-4=0$ and $x+y+1=0$ on the graph paper and check whether they are consistent or not.

Watch Video Solution

110. Draw the graph of $2x+y=6$ and $2x-y+2=0$ and find the solution from the graph.

Watch Video Solution

111. Show that the following pair of equations are consistent and solve them graphically. X+3y=6 and 2x-3y=12.

Watch Video Solution

112. Find the solution of x+2y=10 and 2x+4y=8 graphically.

Watch Video Solution

113. Solve the equations graphically $3x + 4y = 10$ and $4x - 3y = 5$.

Watch Video Solution

114. Solve each of the following pairs of equations by reducing them to a pair of linear equations.

$$\frac{5}{x-1} + \frac{1}{y-2} = 2 \text{ and } \frac{6}{x-1} - \frac{3}{y-2} = 1.$$

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115. Draw the graph of $2x+y=6$ and $2x-y+2=0$ and find the solution from the graph.

Watch Video Solution

116. What is ment by consistenft equations? Give example.

Watch Video Solution

117. Cost of Mathematics textbook is Rs. 10 less than twice of cost of English textbook. Write this in linear equaton.

Watch Video Solution

118. 10 students of Class-X took part in a mathematics quiz. If the number of girls in 4 more than the number of boys then, find the number of boys and the number of girls who took part in the quiz.\

Watch Video Solution

119. Solve the given pair of linear equations by elimination method. $2x+y-5=0$ and $3x-2y-4=0$.

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120. Solve the pair $2x+3y=12$ and $3x+2y=13$ in the elimination method.

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121. Say whether the solution for $2x+3y=12$ and $3x+2y=13$ is exist or not basing on the coefficients.

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122. Check whether the number of solutions of $2x+3y=12$ and $3x+2y=13$ are infinity or not. Give reasons.

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123. Solve the following equations by substitution method.

(i) $2x-7y=3$

(ii) $4x+y=21$.

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124. Solve the following equations by substitution method.

(i) $2x-7y=3$

(ii) $4x+y=21$.

Watch Video Solution

125. Solve the given pair of linear equations by elimination method.

$2x+y-5=0$ and $3x-2y-4=0$.

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126. Solve the linear equations $2x+3y=12$ and $3x+2y=13$ by graph method.

Watch Video Solution

127. Solve 2x+3y=12 and 3x+2y=13 in the method of substitution.

Watch Video Solution

128. Why there exist infinite solutions to the straight line 2x+3y=12 ?

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129. Which method do you adopt to solve the given pair of linear equation $2x + 3y = 12$ and $3x + 2y = 13$? Why do you so? Solve x and y in any method

Watch Video Solution

130. A pair of linear equations in two vairables are 2x-y=4 and 4x-2y=6. The pair of equations are.....

A. Consistent

B. Dependent

C. Inconsistent

D. Cannot say

Answer:

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131. Solution for the equations $\sqrt{3}x + \sqrt{5}y = 0$ and $\sqrt{7}x + \sqrt{11}y = 0$ is.....

A. $x = 3, y = 5$

B. $x = 7, y = 11$

C. $x = 1, y = 1$

D. $x = 0, y = 0$

Answer:

Watch Video Solution

132. The value of 'x' in the equation 3x-(x-4)=3x+1 is.....

A. -3

B. 3

C. 3

D. 10

Answer:

Watch Video Solution

133. Which of the following is inconsistent equation to 2x+3y-5=0?

A. $4x - 6y - 11 = 0$

B. $2x + y = 5$

C. $x + 3y = 5$

D. $4x + 6y - 11 = 0$

Answer:

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134. The value of k forf which the system of equations kx-y=2 and 6x-2y=3 has no solution, is.....

A. $= 3$

B. $\neq 3$

C. $\neq 0$

D. $= 0$

Answer:

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135. If $2x + 3y = 8$ and $4x + py = 16$ has infinite solutions, then $p =$ .....

A. 8

B. 6

C. 10

D. 16

Answer:

Watch Video Solution

136. Which of the following pairs of equations represent inconsitent system?

A. $2x + 3y = 8, 5x - 4y = 3$

B. $6x + 3y = 9, x - 8y = 0$

C. $2x + 5y = 11, 4x + 10y = 21$

D. $3x - 4y = 6, 6x - 8y = 12$

Answer:

Watch Video Solution

137. For which value of k will the following pair of linear equations have no solution 3x+y=1, (2k-1)x+(k-1)y=2k-1?

A. 1

B. 2

C. -2

D. -1

Answer:

Watch Video Solution

138. If the lines given by 3x+2ky=2 and 2x+5y+1=0 are parallel, then the value of k is

A. $\frac{15}{4}$

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

C. $\frac{1}{4}$

D. $-\frac{3}{7}$

Answer:

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139. The pair of linear equations 3x+4y+5=0 and 12x+16y+15=0 have.....

A. Unique

B. many

C. two

D. no

Answer:

Watch Video Solution

140. The pair of linear equations px+2y=5 and 3x+y=1 has unique solution if

A. $p \neq 6$

B. $p = 6$

C. $p = 5$

D. $p \neq 5$

Answer:

Watch Video Solution

141. The pair of equations y=0 and y=-3 has

A. no solution

B. Unique solution

C. many solutions

D. two solutions

Answer:

Watch Video Solution

142. The lines represented by 8x+2py=2 and 2x+5y+1=0 are prarllel if p=

A. $\frac{-5}{4}$

B. $\frac{2}{7}$

C. 10

D. $\frac{3}{8}$

Answer:

Watch Video Solution

143. The pair of equations 3x+2y=5, 2x-3y=7

A. consistent

B. Inconsistent

C. Has infinite solutions

D. has unique solution

Answer:

Watch Video Solution

144. Solution of the equations $\sqrt{2}x + \sqrt{3}y = 0$ and $\sqrt{3x} - \sqrt{8y} = 0$

A. $x = 1, y = 0$

B. $x = 0, y = 1$

C. $x = 1, y = 1$

D. $x = 0, y = 0$

Answer:

Watch Video Solution

145. The pair of equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ has unique solution, then.....

A. $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$

B. $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

C. $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

D. $\frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

Answer:

Watch Video Solution

146. The age of a daughter is one third the age of her father. If the present age of father is x years, then the age of the daughter after 18 years is

A. $\frac{x+18}{3}$

B. $\frac{x}{3}-18$

C. $x+18$

D. $\frac{x}{13}+18$

Answer:

Watch Video Solution

147. If x=1, then the value of y satisfying the equation $\frac{5}{x}+\frac{3}{y}=6$

A. 3

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

C. $-\frac{1}{3}$

D. 1

Answer:

Watch Video Solution

148. The value of y when $\frac{x+y}{xy}=2$ and $\frac{x-y}{xy}=6$ is

A. $\frac{1}{4}$

B. $-\frac{1}{2}$

C. $-\frac{7}{4}$

D. $\frac{5}{4}$

Answer:

Watch Video Solution

149. If ax+by=c and px+qy=r has unique solution, then

A. $\frac{a}{b}=\frac{p}{q}$

B. $ab=pq$

C. $\frac{a}{q} = \frac{b}{p}$

D. $aq \neq bp$

Answer:

Watch Video Solution

150. If 5x+py+8=0 and 10x+15y+12=0 has no solution, then p=

A. $7\frac{1}{2}$

B. $6\frac{1}{2}$

C. 7

D. 4

Answer:

Watch Video Solution

151. y =5x is a line

A. Parallel to X- axis

B. Parallel to Y- axis

C. parallel to $x = 5y$

D. passes through the origin

Answer:

Watch Video Solution

152. x=7 is a line

A. Parallel to X- axis

B. Parallel to Y- axis

C. passes through the origin

D. passing through $(0, 7)$

Answer:

Watch Video Solution

153. The point (-3,-8) is in the .....quadrant

A. Q_1

B. Q_2

C. Q_3

D. Q_4

Answer:

Watch Video Solution

154. The point (7,-5) is in the.....quadrant.

A. I

B. II

C. III

D. IV

Answer:

Watch Video Solution

155. $x - y = 0\,, 2x - y = 2,$ then $y =$

A. 1

B. 2

C. 0

D. -2

Answer:

Watch Video Solution

156. The larger of two supplementary angles exceeds the smaller by 38°. Find them.

A. $71^\circ, 108^\circ$

B. $72^\circ, 108^\circ$

C. $109^\circ, 71^\circ$

D. $142^\circ, 38^\circ$

Answer:

Watch Video Solution

157. Find the value of x if $y = \frac{3}{4}x$ and 5x+8y=33.

A. 2

B. 3

C. 4

D. -3

Answer:

Watch Video Solution

158. Which of the following is not a solution of the equation 2a+3b=5?

A. $(1, 1)$

B. $(-2, 3)$

C. $(4, -1)$

D. $(1, 7)$

Answer:

Watch Video Solution

159. Solve each of the following pairs of equations by reducing them to a pair of linear equations. $\frac{2}{x} + \frac{3}{y} = 13$ and $\frac{5}{x} - \frac{4}{y} = -2$ where $x \neq 0, y \neq 0$.

A. $\left(\frac{-1}{2}, \frac{-1}{3}\right)$

B. $\left(-\frac{1}{2}, \frac{1}{3}\right)$

C. $\left(\frac{1}{3}, \frac{1}{2}\right)$

D. $\left(\frac{1}{2}, \frac{1}{3}\right)$

Answer:

Watch Video Solution

160. $\frac{120}{x} + \frac{12}{x} = 11$, then x=

A. 132

B. 11

C. 12

D. 13

Answer:

Watch Video Solution

161. The graph of a pair of linear equations in two variables is represented by.....

A. straight lines

B. Curves

C. Triangles

D. none

Answer:

Watch Video Solution

162. The graph of a pair of linear equations such that $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ in two variables in represented by.....

A. intersecting lines

B. Two triangles

C. Circles

D. two parallel lines

Answer:

Watch Video Solution

163. The graph of two linear equations such that $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ is represented by.....

A. parallel lines

B. Two intersecting lines

C. Circles

D. none

Answer:

Watch Video Solution

164. $500x + 240y = 8, 130x + 240y = \frac{43}{10}$ then x=.....

A. $\frac{9}{200}$

B. $\frac{7}{20}$

C. $\frac{1}{100}$

D. $\frac{1}{10}$

Answer:

Watch Video Solution

165. $500x + 240y = 8, 130x + 240y = \frac{43}{10}$ then x=.....

A. 1

B. 0

C. 10

D. none

Answer:

Watch Video Solution

166. The pair of equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ are consistent, then.....

A. $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$

B. $\frac{a_1}{a_2} = \frac{b_1}{b_2}$

C. $\frac{a_1}{a_2} = 1$

D. none

Answer:

Watch Video Solution

167. Sita has pencils and pens which are together 40 in number. If she has 5 less pencils and 5 more pens the number of pens become four times the number of pencils. Represent this situation in a linear equation form.

A. $x - y = 40$

B. $x + y = 40$

C. $x - y = 7$

D. all

Answer:

Watch Video Solution

168. If $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ then the lines are.....lines.

A. Parallel

B. Intersecting

C. Coincident

D. none

Answer:

Watch Video Solution

169. The lines represented by 5x+7y-14=0 and 10x+3y-8=0 are ..... lines.

A. coincident

B. Vertical

C. Parallel

D. consistent

Answer:

Watch Video Solution

170. The standard form of a linear equations is.....

A. $xa + y = 0$

B. $ax + by$

C. $ax + b = 0$

D. $ax + by + c = 0$

Answer:

Watch Video Solution

171. The lines 3x+8y-13=0 and -6x-16y+23=0 are.....lines.

A. coincident

B. Parallel

C. Circular

D. none

Answer:

Watch Video Solution

172. The lines represented by $5x+3y-7=0$ and $6y+10x-14=0$ are..... lines.

A. coincident

B. Parallel

C. Intersecting

D. none

Answer:

Watch Video Solution

173. The pairs of equations $4x-2y+6=0$ and $2x-y+8=0$ has.....solutions.

A. 1

B. 12

C. No solution

D. 10

Answer:

Watch Video Solution

174. The number of solutions to the pair of equations 6x-7y+8=0 and 12x-14y+10=0 is.....

A. 1

B. 20

C. 3

D. infinite

Answer:

Watch Video Solution

175. The number of solutions to the pair of equations 11x-7y=6 and 4x+9y=8 is.....

A. 4

B. 3

C. 7

D. 1

Answer:

Watch Video Solution

176. If the pair of equations kx+14y+8=0 and 3x+7y+6=0 has a unique solution then.....

A. $k \neq 6$

B. $k = 0$

C. $k = 7$

D. none

Answer:

Watch Video Solution

177. $a_1x + b_1y + c_1 = 0$ and $a_2x + b_\circ y + c_2 = 0$ are.....equations.

A. Parallel

B. Pair of linear

C. consistent

D. none

Answer:

Watch Video Solution

178. If $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ then the lines will have.....solutions.

A. Infinite

B. 2

C. 3

D. 7

Answer:

Watch Video Solution

179. 3x-2y+6=0,6x-4y+8=0 represents.....lines.

A. consistent

B. Inconsistent

C. circle

D. parallel

Answer:

Watch Video Solution

180. 5x-2y-10=0,10x-4y-20=0 these are.....lines.

A. coincident

B. Parallel

C. intersecting

D. none

Answer:

Watch Video Solution

181. The number of solutions to 4x+6y-7=0 and 8x+5y-8=0 is.....

A. 14

B. 3

C. 4

D. 1

Answer:

Watch Video Solution

182. $\frac{2}{x}+\frac{3}{y}=2, \frac{12}{x}-\frac{9}{y}=3$ then x=.....

A. 1

B. 4

C. 2

D. none

Answer:

Watch Video Solution

183. $\frac{2}{x}+\frac{3}{y}=2, \frac{12}{x}-\frac{9}{y}=3$

In the above problem $y=$ .....

A. 2

B. -1

C. 7

D. 3

Answer:

Watch Video Solution

184. The lines x=5y passes through.....

A. $(1, 1)$

B. $(2, 3)$

C. $(0, 9)$

D. $(0, 0)$

Answer:

Watch Video Solution

185. Solve the following equations:

$2^x + 3^y = 17$ and $2^{x+2} - 3^{y+1} = 5$

A. 2

B. 3

C. 1

D. 7

Answer:

Watch Video Solution

186. Solve the following equations:

$2^x + 3^y = 17$ and $2^{x+2} - 3^{y+1} = 5$

In the above problem $x =$ .....

A. 2

B. 4

C. 3

D. none

Answer:

Watch Video Solution

187. Solve the following equations: $\frac{ax}{b} - \frac{by}{a} = a + b$, ax-by=2ab.

A. 3b

B. $\frac{-3}{b}$

C. 1

D. $-2a$

Answer:

Watch Video Solution

188. Solve the following equations: $\frac{ax}{b} - \frac{by}{a} = a + b$, ax-by=2ab.

In the above problem $y =$ .....

A. $-a$

B. 2a

C. $-a^2$

D. $3b - a$

Answer:

Watch Video Solution

189. Slope of the line ax+by+c=0 is.....

A. $\frac{b}{a}$

B. $\frac{1}{a}$

C. $\frac{a}{b}$

D. $\frac{-a}{b}$

Answer:

Watch Video Solution

190. The line ax+by+c=0 does not passes through.....

A. $(0, 0)$

B. $(a, 0)$

C. both A & B

D. none

Answer:

Watch Video Solution

191. If x+y=7,x-y=1 then 2x =.....

A. 3

B. 4

C. 7

D. 8

Answer:

Watch Video Solution

192. In the above problem a_5=...

A. 3

B. 7

C. 1

D. 4

Answer:

Watch Video Solution

193. Slope of the line y=x is.....

A. 2

B. -1

C. 1

D. none

Answer:

Watch Video Solution

194. The line x=2015 is.....

A. Slope not defined

B. Parallel to Y – axis

C. both A & B

D. none

Answer:

Watch Video Solution

195. $x + \frac{6}{y} = 6, 3x - \frac{8}{y} = 5$ then y=.....

A. -2

B. 4

C. 1

D. 2

Answer:

Watch Video Solution

196. $x + \frac{6}{y} = 6, 3x - \frac{8}{y} = 5$ then y=.....

A. 3

B. 2

C. -1

D. 9

Answer:

Watch Video Solution

197. 3x-5y=-1,-y+x=-1 then (x,y)=.....

A. $(-2, -1)$

B. $(2, -1)$

C. $(1, 2)$

D. none

Answer:

Watch Video Solution

198. The graph of 3x-y=-1.....

A. Circle

B. Straight line

C. curve

D. none

Answer:

Watch Video Solution

199. The value of y in -5x+10y=100 at x=0 is.....

A. 12

B. 9

C. -10

D. 10

Answer:

Watch Video Solution

200. If x+y=36, then at y=-1,x=.....

A. 38

B. 37

C. 80

D. 12

Answer:

Watch Video Solution

201. x+y=10,x-y=-4 then x=.....

A. 4

B. 3

C. 5

D. None

Answer:

Watch Video Solution

202. The fencing of a square garden is 20 m in length. How long is one side of the garden?

Watch Video Solution

203. Solution to 2x-2y-2=0, 4x-4y-5=0 is.....

A. $(1, 4)$

B. $(2, -1)$

C. $\left(8, \frac{1}{4}\right)$

D. No solution

Answer:

Watch Video Solution

204. The two lines 2x+y-6=0 and 4x-2y-4=0 intersect at.....

A. $(2, 2)$

B. $(3, 2)$

C. $(1, -4)$

D. $(1, 1)$

Answer:

Watch Video Solution

205. Solution to x-y=1, 2x-2y=7 is.....

A. $(1, 1)$

B. $(1, 9)$

C. $(8, 4)$

D. No solution

Answer:

Watch Video Solution

206. $\left(2, \frac{-1}{4}\right) \in$ .....

A. Q_4

B. Q_3

C. Q_2

D. Q_1

Answer:

Watch Video Solution

207. $Q_1 \frown Q_2$ = ...

A. $\{\}$

B. $\{1, 2, 3\}$

C. $\{8, 9\}$

D. None

Answer:

Watch Video Solution

208. Perimeter of rectangle =.....

A. $l + b$

B. $l - b$

C. $2(l + b)$

D. $\frac{l+b}{2}$

Answer:

Watch Video Solution

209. x+y=2015 has ..... Number of solutions.

A. 10

B. 2014

C. 20

D. Infinite

Answer:

Watch Video Solution

210. px+3y-(p-3)=0, 12x+py-p=0 has infinitely many solutions then p=.....

A. 7

B. 9

C. ± 71

D. ± 6

Answer:

Watch Video Solution

211. For what value of 'k', the pair of equation 3x+4y+2=0 and 9x+12y+k=0 represent coincident lines.

A. 12

B. 9

C. 6

D. 7

Answer:

Watch Video Solution

212. 2x+3y=1,3x-y=7 then (x,y)=.....

A. $(2, -1)$

B. $(-2, 1)$

C. $\left(8, \frac{1}{4}\right)$

D. $(0, 3)$

Answer:

Watch Video Solution

213. If 7x-8y=9, then y=.....

A. $9 + 7x$

B. $\frac{9 - 7x}{8}$

C. $\frac{9 - 7x}{8}$

D. None

Answer:

Watch Video Solution

214. Slope of the line x=2y is.....

A. 2

B. -2

C. 1

D. $\frac{1}{2}$

Answer:

Watch Video Solution

215. Slope of X-axis is .....

A. 0

B. 1

C. -1

D. 2

Answer:

Watch Video Solution

216. Angle between any two parallel lines is .....

A. 70°

B. 0°

C. 100°

D. 180°

Answer:

Watch Video Solution

217. 4m-2n=2,6m-5n=9 then n=.....

A. 5

B. 4

C. 1

D. -3

Answer:

Watch Video Solution

218. 4m-2n=2,6m-5n=9

In the above problem $m =$ .....

A. -1

B. 4

C. -31

D. 7

Answer:

Watch Video Solution

219. 2u+3v=2,4u-6v=0 then v=.....

A. $\frac{1}{2}$

B. 1

C. $\frac{1}{31}$

D. $\frac{1}{3}$

Answer:

Watch Video Solution

220. 2u+3v=2,4u-6v=0 the value of $u =$ .....

A. $\frac{1}{21}$

B. $\frac{1}{2}$

C. 2

D. 4

Answer:

Watch Video Solution

221. Area of rectangle =.....

A. l^2b

B. $\frac{l}{b}$

C. lb

D. None

Answer:

Watch Video Solution

222. $\frac{x+3}{2} - y = 2, \frac{x-3}{2} + 2y - 4\frac{1}{2}$ then x=.....

A. 1

B. 4

C. 51

D. None

Answer:

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223. The diagonals of a rhombus are 7cm and 12 cm. Find its area.

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224. If ax+b=0, then x=.....

A. $-b$

B. $-\frac{b}{a}$

C. $\frac{b}{a}$

D. None

Answer:

Watch Video Solution

225. 2x-3y=-12 then at x=0, y=.....

A. 4

B. 6

C. 8

D. 12

Answer:

Watch Video Solution

226. Two parallel lines differ by.....

A. Circle

B. triangles

C. constant

D. None

Answer:

Watch Video Solution

227. x=1 and y=$-\frac{1}{2}$ then x-y=.....

A. -1

B. 1

C. $-\frac{1}{2}$

D. $\frac{3}{2}$

Answer:

Watch Video Solution

228. If 99x+101y=499,101x+99y=501 then x=.....

A. -1

B. 3

C. 4

D. 2

Answer:

Watch Video Solution

229. If 99x+101y=499,101x+99y=501 then x=.....

A. 3

B. 4

C. 2

D. 8

Answer:

Watch Video Solution

230. 141x+93y=189,93x+141y=45 then y=.....

A. -1

B. 4

C. -2

D. 3

Answer:

Watch Video Solution

231. A thin wire 20 centimeters long is formed into a rectangle. If the width of this rectangle is 4 centimeters, what is its length?

Watch Video Solution

232. If -x-y=-10, then x=.....

A. $y-3$

B. y^2-1

C. $y-10$

D. $y+10$

Answer:

Watch Video Solution

233. $(-a, -b) \in$ .....

A. Q_2

B. Q_3

C. Q_1

D. Q_4

Answer:

Watch Video Solution

234. (2,0) lines on.....

A. Q_1

B. Q_2

C. x axis

D. y axis

Answer:

Watch Video Solution

235. The line $2x - 3y = 8$ intersects X-axis at.....

A. $(2, 3)$

B. $(1, 1)$

C. $(0, 8)$

D. $(8, 0)$

Answer:

Watch Video Solution

236. The values of k for which the pair of linear equations 3x-2y=7 and 6x+ky+11=0 has a unique solution is .....

A. all number expect 4

B. all number expect -4

C. 4

D. -4

Answer:

Watch Video Solution

237. The pair of linear equations -3x+4y=7 and $\frac{9}{2}x - 6y + \frac{21}{2} = 0$ has.....

A. infinite number of solutions

B. no solution

C. two solutions

D. unique solution

Answer:

Watch Video Solution

238. If $ad \neq bc$ then the pair of linear equations ax+by=p and cx+dy=q has.....solutions.

A. no

B. unique

C. 2

D. none

Answer:

Watch Video Solution

239. A line parallel to the line x+2y+1=0 is.....

A. $x + y + 3 = 0$

B. $2x + 4y + 1 = 0$

C. $x - y + 1 = 0$

D. all

Answer:

Watch Video Solution

240. The pair of equations x=3,y=2 graphically represent lines which.....

A. intersect at $(3, 4)$

B. Intersect at $(4, 3)$

C. parallel

D. coincident

Answer:

Watch Video Solution

241. If the pair of equations 2x+y=7 and 6x-py-21=0 has infinite number of solutions then p=.....

A. 3

B. 4

C. 5

D. none

Answer:

Watch Video Solution

242. The value of k for which the system of equations kx+3y=1, 12x+ky=2 has no solution is.....

A. $k = -1$

B. $k = 3$

C. $k = 2$

D. $k = -6$

Answer:

Watch Video Solution

243. The line 3x+y=7 intersects X-axis at.....

A. $\left(\frac{7}{2}, 0\right)$

B. $\left(0, \frac{7}{2}\right)$

C. $(0, 1)$

D. $(0, 3)$

Answer:

Watch Video Solution

244. For what value of k, 2x+3y=4 and (k+2)x+6y=3k+2 will have infinitely many solutions?

A. $k = -1$

B. $k = 2$

C. $k = 7$

D. None

Answer:

Watch Video Solution

245. $\frac{x+1}{2}+\frac{y+1}{3}=9, \frac{x-1}{3}+\frac{y+1}{2}=8$ then x=.....

A. 13

B. 17

C. -3

D. 10

Answer:

Watch Video Solution

246. $\frac{x+1}{2}+\frac{y-1}{3}=9, \frac{x-1}{3}+\frac{y+1}{2}=8$

In the above problem $y=$ .....

A. 4

B. -3

C. 9

D. 7

Answer:

Watch Video Solution

247. If the equations (2m-1)x+3y-5=0, 3x+(n-1)y-2=0 has Infinlte number of solutions then n=.....

A. 1

B. $\frac{5}{11}$

C. $\frac{1}{5}$

D. $\frac{11}{5}$

Answer:

Watch Video Solution

248. If the equations (2m-1)x+3y-5=0, 3x+(n-1)y-2=0 has Infinlte number of solutions then

In the above problem m = ...

A. $\frac{17}{4}$

B. $\frac{7}{4}$

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

D. $\frac{8}{3}$

Answer:

Watch Video Solution

249. A fraction becomes $\frac{9}{11}$ if 2 is added to both numerator and denominator. If 3 is added to both numerator and denominator It bevomes $\frac{5}{6}$ Then the fraction is .....

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

B. $\frac{1}{2}$

C. $\frac{9}{7}$

D. $\frac{7}{9}$

Answer:

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250. The ration of incomes of two persons is 11: 7 and the ration of their expenditurca is 9 :5, if each of them manages to save Rs400 per month then the monthly income of first person is .....

A. 2200

B. 1200

C. 800

D. 1010

Answer:

Watch Video Solution

251. The ration of incomes of two persons is 11: 7 and the ration of their expenditurca is 9 :5, if each of them manages to save Rs400 per month then the monthly income of first person is .....

A. 8001

B. 1100

C. 1400

D. 4100

Answer:

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252. The age of a father 8 years ago was 5 times that of his son 8 years. Hence, his age will be 8 years more than twice the age of his son. Then the present age of fatherd is .....years.

A. 80

B. 92

C. 24

D. 48

Answer:

Watch Video Solution

253. The age of a father 8 years ago was 5 times that of his son 8 years. Hence, his age will be 8 years more than twice the age of his son. Then the present age of fatherd is .....years.

A. 16

B. 96

C. 12

D. None

Answer:

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254. The two lines 2x-y=1,x+2y=13 will intersect at .....

A. $(5, 3)$

B. $(3, 5)$

C. $(1, 3)$

D. $(3, 9)$

Answer:

Watch Video Solution

255. Identity parallel lines

A. $2x + 3y = 6, 8x + 12y = 9$

B. $x + y = 7, x - y = 1$

C. $2x + y = 7, 3x - 7 = 7$

D. all

Answer:

Watch Video Solution

256. Solution to 2x+3y=12,2y-1=x is.....

A. $(8, -1)$

B. $(3, 8)$

C. $(3, 2)$

D. $(1, -1)$

Answer:

Watch Video Solution

257. The lines x-y=1, 2x+y=8 intersect at .....

A. $(1, 9)$

B. $(9, 3)$

C. $(3, 4)$

D. None

Answer:

Watch Video Solution

258. If $\frac{5}{x-1}+\frac{1}{y-2}=2, \frac{6}{x-1}+\frac{-3}{y-2}=1$ then x=.....

A. 4

B. 7

C. -1

D. 3

Answer:

Watch Video Solution

259. In the above problem a_5=...

A. 1

B. -1

C. 5

D. 9

Answer:

Watch Video Solution

260. Solution to $\frac{a^2}{x} - \frac{b^2}{y} = 0, \frac{a^2 b}{x} + \frac{b^2 a}{y} = a + b, x \neq 0, y \neq 0$ is.....

A. $\left(-a^2, -b^2\right)$

B. $\left(a, b^2\right)$

C. $(a, -b)$

D. (a^2, b^2)

Answer:

Watch Video Solution

261. The point of intersecting of x+y=6 and x-y=4 is.....

A. $(5, 1)$

B. $(1, 5)$

C. $(2, 4)$

D. $(4, 6)$

Answer:

Watch Video Solution

262. The graph y=ax+b is a straight line which intersects X-axis at

A. $\left(0, -\frac{b}{a}\right)$

B. $(0, b)$

C. $\left(-\frac{b}{a}, 0\right)$

D. $(b, 0)$

Answer:

Watch Video Solution