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Class: 10
Subject: Mathematics
Topic: Pair of Linear equations in two variables
No. of Questions: 25

Q1. The coach of a cricket team buys 3 bats and 6 balls for Rs.3900. Later, he buys another bat and 3 more balls of same kind for Rs. 1300. Represent this situation algebraically and geometrically.

Q2. Solve the system of equations graphically: $2x - y - 4=0$; $x + y + 1=0$. (CBSE-2002)

Q3. Draw the graph of $2x + y=6$ and $2x - y + 2=0$. Shade the region bounded by these lines and x-axis. Find the area of the shaded region. (CBSE-2002)

Q4. Determine graphically the vertices of a trapezium, the equations of whose sides are: $x=0$, $y=0$, $y=4$ and $2x + y=6$. Also determine the area.

Q5. Solve: $3(2u+v) =7uv$; $3(u+3v) =11uv$

Q6. Solve: $\frac{4}{x}+3y=8$; $\frac{6}{x}-4y=-5$ (CBSE- 2010)

Q.7 Solve: $x + 2y + z=7$; $x + 3z=11$; and $2x - 3y=1$

Q8. Solve for x and y; $7(y+3) - 2(x+2) =14$; $4(y - 2) + 3(x - 3) =2$

Q9. $\frac{5}{x-1}+\frac{1}{y-2}=2; \frac{6}{x-1}-\frac{3}{y-2}=1$, find x and y. (CBSE-2009)

Q10. $x + y=2xy$; $\frac{x-y}{xy}=6$; $x, y\neq0$, solve for x and y.

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Q11. Solve $\frac{x}{a}+\frac{y}{b}=2$; ax – by= a^2-b^2 using cross multiplication. (CBSE-2005)

Q12. Solve: ax + by=a – b; bx – ay=a + b using cross multiplication method. (CBSE-2000)

Q13. Find the value of k for which the following system of linear equations has infinite solutions: x+ (k+1) y=5; (k+1)x + 9y= 8k – 1

(CBSE-2002)

Q14. For what value of k, will the system of equations x + 2y=5 and 3x + ky – 15=0 has a unique solution?

(CBSE-2001)

Q15. Find the values of α and β for which the following system of linear equations has infinite number of solution: 2x + 3y=7; 2αx + (α+β)y=28.

(CBSE-2001)

Q16. The sum of a 2-digit number and the number obtained by reversing the order of its digits is 165. If the digits differ by 3, find the number?

(CBSE-2002)

Q17. A and B are friends and their ages differ by 2 years. A's father D is twice as old as A and B is twice as old as his sister C. the age of D and C differ by 40 years. Find the ages of A and B.

Q18. X takes 3 hours more than Y to walk 30 km. But, if A doubles his pace, he is ahead of Y by $1\frac{1}{2}$ hours. Find their speed of walking.

Q19. Students of a class are made to stand in rows. If one student is extra in a row, there would be 2 rows less. If one student is less in a row there would be 3 more rows. Find the number os students in the class.

Q20. On selling a tea set at 5% loss and a lemon set at 15% gain, a crockery seller gains Rs. 7. If he sells the tea set at 5% gain and lemon set at 10% gain, he gains Rs.13. find the actual price of the tea set and the lemon set.

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Q21. Find the values of p and q for which the following system of equations has infinite number of solution: $2x + 3y=7$; $(p+q)x + (2p-q)y=21$.

(CBSE-2001)

Q22. Solve: $ax + by=c$ and $bx + ay=1+c$

Q23. Find the value of k, for which the system of equations has no solution in $3x – 4y + 7=0$; $kx + 3y – 5=0$

Q24. Determine the value of k, so that the following equations has no solution:
$(3k + 1)x + 3y – 2=0$; $(k^2 + 1)x = (k – 2)y – 5=0$

Q25. A fraction becomes 4/5; if 1 is added to both numerator and denominator. If however, 5 is subtracted from both numerator and denominator, the fraction becomes 1/2. What is the fraction?