Class – X Compartment Examination
Chapter – 3 (Pair of Linear Equations in Two Variables)
Work sheet – 1

Note: please paste the graph where it is required.

1. Amla goes to bazaar with rupees 20 and wants to buy pencils and rubbers. The number of rubbers she bought is half the number of pencils she had. Represent this situation algebraically and graphically (geometrically)

2. Rema went to a fair and purchased 2 pens and 3 erasers for rupees 9. Her friend Sona also bought 4 pens and 6 erasers of the same kind for rupees 18. Represent this situation algebraically and graphically.

3. Two roads are represented by the equations, $x + 2y – 4 = 0$ and $2x + 4y – 12 = 0$. Represent this situation geometrically.

4. Check graphically whether the pair of equations
   $x + 3y = 6$ ---------- (1)
   $2x – 3y = 12$ -------- (2)
   Is consistent, if so solve them graphically.

5. Graphically find whether the following pair of equations has no solutions, unique solutions or infinitely many solutions.
   $5x – 8y + 1 = 0$ ---------- (1)
   $3x – 24/5y + 3/5 = 0$ ------ (2)

6. Chanda purchased bags and books. If the number of bags is two less than twice the number of books purchased. Also the number of bags is four less than four times the number of books purchased. Find how many books and bags Chanda purchased.

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Work sheet – 2

1. Solve the following pair of equations by substitution method.
   $7x - 15y = 2$
   $x + 2y = 3$

2. Safia tells her daughter," seven years ago, I was seven times as old you were then. Also, three years from now, I shall be three times as old as you will be." Solve this situation by substitution method.

3. Cost of 2 red pens and 3 blue pens is rupees 9. The cost of 4 red pens and 6 blue pens is rupees 18. Find the cost of one red pen and one blue pen.

4. Two rails are represented by $x + 2y - 4 = 0$ and $2x + 4y - 12 = 0$. Will the rails cross each other?

5. The ratio of incomes of Rehan and Pitam is 9:7 and ratio of their expenditures is 4:3. If each of them manages to save rupees 200 per month. Find their monthly income.

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Work sheet – 3

1. Use elimination method to find all possible solutions of the following pair of linear equations.
   $2x + 3y = 8$
   $4x + 6y = 7$

2. 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 numbers. How many such numbers are there?

3. If 2 tickets from Begaluru to Mallashvarum and 3 tickets from Bangaluru to Yashwanthpur cost 46 rupees. But 3 tickets from Bengaluru to Mallashvarum and 5 tickets from Begaluru to Yashwanthpur cost 74 rupees. Find the fares: Bengaluru to Malleshvarum and to Yashwanthpur.

4. The cost of 5 oranges and three apples is rupees 35 and the cost of 2 oranges and 4 apples is rupees 28. Find the cost of an orange and an apple.

5. For which value of 'a' does the pair of equations given below has unique solutions?
   $4x + ay + 8 = 0$
   $2x + 2y + 2 = 0$

6. For what value of p will the following pair of linear equations have infinitely many solutions?
   $px + 3y - (p - 3) = 0$
   $12x + py - p = 0$

Class – X Compartment Examination
Chapter – 3 (Pair of Linear Equations in Two Variables)
Revision Test

Time - 1Hour **Total Marks 20**

Part – A

1. For which value of p does the pair of equations given below has unique solutions.
   $x + 2y = 3$
   $5x + py + 7 = 0$ (1)

2. Does the point (2, 3) lies on the graph of the line $3x – 2y = 5$. (1)

Part – B

3. Find the value of m and n such that the pair of equations $2x – 3y = 7$ and $mx + ny = b$ have infinitely many solutions? (2)

4. Solve for a and b (2)
   $0.4a + 0.3b = 1.7$
   $0.7a – 0.2b = 0.8$

Part – C

5. Solve with cross- multiplication methods (3)

$m + n = a + b$

$am – bn = a^2 – b^2$

6. The sum of the present mother and her daughters' age is 40 years. If mother's age is three times the age of daughter. Find their present ages. (3)

Part - D

7. Solve the following pair of equation graphically (4)
   $3m + 5n = 0$ and $3m – 5n = -18$. Shade the region between these lines and x axis.

8. The sum of a two-digit number and number obtained by reversing the digits is 99. If the new number is 9 more than original number. Find the number. (4)