

ASSIGNMENT: PAIR OF LINEAR EQUATION IN TWO VARIABLES

Q1. Solve the following equations

1. $x + y = 14$ & $x - y = 4$

2. $x + y = 5$ & $2x - 3y = 4$

3. $x - y = 3$ & $\frac{x}{3} + \frac{y}{2} = 6$

4. $3x + 4y = 10$ & $2x - 2y = 2$

5. $3x - 5y - 4 = 0$ & $9x = 2y + 7$

6. $0.4x - 1.5y = 6.5$ & $0.3x + 0.2y = 0.9$

7. $0.2x + 0.3y = 13$ & $0.4x + 0.5y = 2.3$

8. $\frac{x}{2} + \frac{2y}{3} = -1$ & $x - \frac{y}{3} = 3$

9. $\frac{3x}{2} - \frac{5y}{3} = -2$ & $\frac{x}{3} + \frac{y}{2} = \frac{13}{6}$

10. $\sqrt{2}x + \sqrt{3}y = 0$ & $\sqrt{3}x - \sqrt{8}y = 0$

11. $\frac{4}{x} + 3y = 14$ & $\frac{3}{x} - 4y = 23$

12. $\frac{2}{x} + \frac{3}{y} = 13$ & $\frac{5}{x} - \frac{4}{y} = -2$

13. $\frac{7x-2y}{xy} = 5$ & $\frac{8x+7y}{xy} = 15$

14. $6x + 3y = 6xy$ & $2x + 4y = 5xy$

15. $\frac{1}{2x} + \frac{1}{3y} = 2$ & $\frac{1}{3x} + \frac{1}{2y} = \frac{13}{6}$

16. $\frac{2}{\sqrt{x}} + \frac{3}{\sqrt{y}} = 2$ & $\frac{4}{\sqrt{x}} - \frac{9}{\sqrt{y}} = -1$

17. $\frac{5}{x-1} + \frac{1}{y-2} = 2$ & $\frac{1}{x-1} - \frac{3}{y-2} = -2$

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

19. $\frac{10}{x+y} + \frac{2}{x-y} = 4$ & $\frac{15}{x+y} - \frac{5}{x-y} = -2$

20. $\frac{1}{3x+y} + \frac{1}{3x-y} = \frac{3}{4}$ & $\frac{1}{2(3x+y)} - \frac{1}{2(3x-y)} = -\frac{1}{8}$

21. $ax + by = c$ & $bx + ay = 1 + c$

22. $\frac{x}{a} + \frac{y}{b} = 2$, $ax - by = (a^2 - b^2)$

23. $px + qy = p - q$ & $qx - py = p + q$

24. $ax + by - a + b = 0$ & $bx - ay - a - b = 0$

25. $47x + 31y = 63$ & $31x + 47y = 15$

26. $23x - 29y = 98$ & $29x - 23y = 110$

27. $71x + 37y = 253$ & $37x + 71y = 287$

28. $37x + 43y = 123$ & $43x + 37y = 117$

29. $217x + 131y = 913$ & $131x + 217y = 827$

30. $41x - 17y = 99$ & $17x - 41y = 75$

31. $152x - 378y = -74$ & $-378x + 152y = -604$

Q2. Solve the equation graphically:

a. $x + 3y = 6$ & $2x - 3y = 12$

b. $2x - y - 5 = 0$ & $x - y - 3 = 0$

c. $x - 2y = 5$ & $3x - 6y = 15$

d. $x - y = 1$ & $2x + y = 8$

e. $x + 2y = -1$ & $2x - 3y = 12$

f. $4x - 5y = 20$ & $3x + 5y - 15 = 0$

g. $5x - y = 5$ & $3x - y = 3$

h. $x + 3y = 6$ & $x - 2y = -2$

i. $x + 2y - 7 = 0$ & $2x - y - 4 = 0$

j. $3x + y - 11 = 0$ & $x - y - 1 = 0$

Q3. Find k so that the equation has Unique solution

a. $4x + ky + 8 = 0$ & $2x + 2y + 2 = 0$

b. $kx + 2y = 5$ & $3x + y = 1$

c. $2x + 3y = 7$ & $2kx + (k + m)y = 2$

Q4. Find k so that the equation has no solution

1. $kx - y = 2$ & $6x - 2y = 3$

2. $2x - ky + 3 = 0$ & $3x + 2y - 1 = 0$

3. $kx + 3y = k - 3$ & $12x + ky = k$

4. $3x + y = 1$ & $(2k - 1)x + (k - 1)y = 2k + 1 = 0$

Q5. Find k so that the equation has Infinite Many solution:

1. $kx + 3y - (k - 3) = 0$ & $12x + ky - k = 0$

2. $2x + 3y = 4$ & $(k + 2)x + 6y = 3k + 2$

3. $(k - 3)x + 3y = k$ & $kx + ky = 12$

4. $x + (k + 1)y = 5$ & $(k + 1)x + 9y = 8k - 1$

5. $kx + 3y = 2k + 1$ & $2(k + 1)x + 9y = 7k + 1$

6. $2x + 3y = 7$ & $(a - 1)x + (a + 2)y = 3a$

7. $x + (k + 1)y = 5$ & $(k + 1)x + 9y = 8k - 1$

8. $2x + 3y = 7$ & $(p + q)x + (2p - q)y = 21$

9. $(2m - 1)x + 3y - 5 = 0$, $3x + (n - 1)y - 2 = 0$

10. $2x + 3y = 7$ & $(a - b)x + (a + b)y = 3a + b - 2$

11. $x + (k + 1)y = 4$ & $(k + 1)x + 9y = 7k + 1$

12. $2x + 3y = 9$ & $(p + q)x + (2p - q)y = 3(p + q + 1)$

13. $3x + 4y = 12$, $(m + n)x + 2(m - n)y = (5m - 1)$

14. $2x + 3y = 7$, $a(x + y) - b(x - y) = 3a + b - 2$

Q7. Find k so that the equation has coincident lines: $2x - 3y = 7$, $(k + 1)x + (1 - 2k)y = (5k - 4)$

Q8. Solve by using method of cross multiplication

a. $x + 3y = 6$ & $2x - 3y = 12$

b. $2x - y - 5 = 0$ & $x - y - 3 = 0$

c. $x - 2y = 5$ & $3x - 6y = 15$

d. $x - y = 1$ & $2x + y = 8$

e. $x + 2y = -1$ & $2x - 3y = 12$

f. $ax + by = c$ & $bx + ay = 1 + c$

g. $3x - 5y - 4 = 0$ & $9x = 2y + 7$

h. $px + qy = p - q$ & $qx - py = p + q$

i. $6x + 3y = 6xy$ & $2x + 4y = 5xy$

j. $\frac{x}{a} + \frac{y}{b} = 2$, $ax - by = (a^2 - b^2)$