



Attempt questions first; check the separate key afterward. Show steps and draw labelled diagrams where asked.

A. Very short answers - 1 mark each

1. Write one linear equation in two variables.
2. Is (2, 3) a solution of $x+y=5$?
3. How many solutions can two intersecting lines have?
4. State the condition for parallel distinct lines $a_1x+b_1y=c_1$ and $a_2x+b_2y=c_2$.
5. Solve $x+y=7$, $x-y=1$.
6. Solve $2x+y=8$, $x+y=5$.
7. Can coincident lines have exactly two common points?
8. Find x if $x+y=9$ and $y=4$.

B. Short answers / practice - 2 marks each

9. Solve $3x+2y=12$, $x-y=-1$.
10. Solve $2x+3y=13$, $3x-2y=0$.
11. Determine consistency: $x+y=2$, $2x+2y=5$.
12. Determine consistency: $x-2y=3$, $2x-4y=6$.
13. Find k for infinitely many solutions: $2x+3y=7$, $4x+ky=14$.
14. Two pens and three pencils cost ₹31; four pens and one pencil cost ₹37. Find each price.
15. Two numbers sum to 36 and differ by 8. Find them.
16. A father is three times his son's age; their age sum is 48. Find ages.
17. Draw graphs of $x+y=6$ and $x-y=2$ and locate intersection.
18. Solve $x/2+y/3=4$, $x-y=3$.
19. Solve $0.2x+0.3y=1.3$, $0.3x-0.2y=0$.

20. A rectangle has perimeter 30 cm and length 3 cm more than breadth. Find dimensions.

C. Application / reasoning - 3 marks each

21. A two-digit number has digit sum 11; reversing it increases it by 27. Find it.
22. A boat travels 30 km downstream in 2 h and upstream in 3 h. Find still-water and stream speeds.

23. A fraction becomes $1/2$ after adding 1 to numerator and denominator, and $1/3$ after subtracting 1 from both. Find it.
24. Solve $5x-3y=1$, $3x+2y=12$.
25. Find k for no solution: $kx+2y=3$, $3x+6y=8$.
26. Explain the geometric meaning of an inconsistent pair.
27. Solve $4x+3y=18$ and $2x-y=4$.
28. The sum of numerator and denominator of a fraction is 11. Adding 1 to each makes it $1/2$. Find it.
29. Find k for infinitely many solutions: $3x+2y=9$, $6x+ky=18$.
30. A boat's downstream and upstream speeds are 18 and 12 km/h. Find still-water and stream speeds.
31. A shop sells 5 notebooks and 3 pens for ₹165, and 3 notebooks and 5 pens for ₹155. Find each price.

D. Extended practice - 5 marks each

32. Adult and child tickets cost ₹80 and ₹50. For 30 tickets the collection is ₹1950. Find ticket counts.
33. A person covers 60 km partly at 5 km/h and partly at 10 km/h in 8 h. Find distance at each speed.
34. Five years ago a father was four times his son's age. Five years hence he will be twice his son's age. Find present ages.
35. Solve by elimination and verify: $7x+5y=29$, $3x-2y=0$.

ANSWER KEY - Numerical / closed questions

- 2) Yes. 3) One. 4) $a_1/a_2=b_1/b_2 \neq c_1/c_2$ when ratios are defined. 5) $x=4$, $y=3$. 6) $x=3$, $y=2$. 7) No; infinitely many. 8) 5. 9) $x=2$, $y=3$. 10) $x=2$, $y=3$. 11) Inconsistent. 12) Infinitely many solutions. 13) 6. 14) Pen ₹8, pencil ₹5. 15) 22, 14. 16) 36, 12 years. 17) (4, 2). 18) $x=6$, $y=3$. 19) $x=2$, $y=3$. 20) 9 cm, 6 cm. 21) 47. 22) 12.5 and 2.5 km/h. 23) $3/7$. 24) $x=2$, $y=3$. 25) 1. 27) $x=3$, $y=2$. 28) $3/8$. 29) 4. 30) 15 km/h; 3 km/h. 31) Notebook ₹22.50; pen ₹17.50. 32) 15 adults, 15 children. 33) 20 km; 40 km. 34) Father 25, son 10. 35) $x=2$, $y=3$.