

Pair of Linear Equations - Exercise 3.2

Exercise 3.2 with independently verified solutions.

CHAPTER

Pair of Linear Equations in Two
Variables

RESOURCE

NCERT Exercises

SOURCE

NCERT Mathematics, Reprint 2026-27

PART 1

Verified NCERT questions and solutions

Verified NCERT questions and solutions

Solutions are checked independently and follow the supplied NCERT chapter edition.

QUESTION

Question 1

substitution method

Solve by substitution.

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

2. $s - t = 3; \frac{s}{3} + \frac{t}{2} = 6$

3. $3x - y = 3; 9x - 3y = 9$

4. $0.2x + 0.3y = 1.3; 0.4x + 0.5y = 2.3$

5. $\frac{2x}{3} + 3y = 0; 3x - 8y = 0$

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

Solution

1. $x = 14 - y \Rightarrow 14 - 2y = 4 \Rightarrow (x, y) = (9, 5)$

2.

$$s = t + 3; 2s + 3t = 36 \Rightarrow (s, t) = (9, 6)$$

3. The second equation is three times the first: infinitely many solutions.

4.

$$2x + 3y = 13, 4x + 5y = 23 \Rightarrow (x, y) = (2, 3)$$

5.

$$x = \frac{8y}{3} \Rightarrow \frac{43y}{9} = 0 \Rightarrow (x, y) = (0, 0)$$

6.

$$9x - 10y = -12, 2x + 3y = 13 \Rightarrow (x, y) = (2, 3)$$

QUESTION

Question 2

substitution method

Solve $2x + 3y = 11$ and $2x - 4y = -24$; hence find m if $y = mx + 3$.

Solution

$$7y = 35 \Rightarrow y = 5, \quad x = -2$$

$$5 = -2m + 3 \Rightarrow m = -1$$

Both original equations evaluate correctly.

Final answer

$$x = -2, \quad y = 5, \quad m = -1$$

QUESTION

Question 3

substitution method · word problems

Form equations and solve by substitution.

1. Two numbers differ by 26; one is three times the other.
2. Supplementary angles differ by 18° .
3. 7 bats and 6 balls cost ₹3800; 3 bats and 5 balls cost ₹1750.
4. Taxi fares are ₹105 for 10 km and ₹155 for 15 km. Find fixed and per-km charges and the 25 km fare.
5. A fraction becomes $\frac{9}{11}$ after adding 2 to numerator and denominator, and $\frac{5}{6}$ after adding 3.
6. Five years hence Jacob is three times his son; five years ago he was seven times his son.

Solution

1.
$$x - y = 26, x = 3y \Rightarrow (x, y) = (39, 13)$$

2.
$$L + S = 180, L - S = 18 \Rightarrow (L, S) = (99^\circ, 81^\circ)$$

3.
$$7b + 6c = 3800, 3b + 5c = 1750 \Rightarrow (b, c) = (500, 50)$$

4.
$$f + 10r = 105, f + 15r = 155 \Rightarrow (f, r) = (5, 10)$$

$$f + 25r = 255$$

5.
$$11x - 9y = -4, 6x - 5y = -3 \Rightarrow (x, y) = (7, 9)$$

6.

$$J - 3S = 10, J - 7S = -30 \Rightarrow (J, S) = (40, 10)$$

Final answer

Answers: 39 and 13; 99° and 81° ; ₹500 and ₹50; ₹5 fixed, ₹10/km, ₹255; 7/9; 40 and 10 years.