

CLASS 10 · HOTS · OLYMPIAD PREPARATION · DPP SHEET

Chapter 3: HOTS: Pair of Linear Equations (Class 10)

Daily practice problems: 8 questions with an answer key

Try every question on your own first. The answer key is on the last page.

1. Solve $\frac{2}{x} + \frac{1}{y} = 4$ and $\frac{1}{x} + \frac{3}{y} = 7$.
2. The digits of a two-digit number add up to 11. If 45 is subtracted from the number, the digits are reversed. Find the number.
3. A father is three times as old as his son. Five years later he will be two and a half times as old as his son. Find their present ages.
4. For what value of k does $3x + 2y = 5$ and $9x + ky = 10$ have no solution?
5. A boat goes 24 km upstream and 28 km downstream in 6 hours. It goes 30 km upstream and 21 km downstream in 6.5 hours. Find the speed of the boat in still water and of the stream.
6. A fraction becomes 1 if 1 is added to the numerator and 1 is subtracted from the denominator. It becomes $\frac{1}{2}$ if only 1 is added to the denominator. Find the fraction.
7. If the length of a rectangle is decreased by 5 and its breadth is increased by 3, its area decreases by 9. If the length is increased by 3 and the breadth by 2, the area increases by 67. Find the length and the breadth.
8. Find the point where the lines $x + y = 6$ and $x - y = 2$ meet.

Answer Key

1. $x = 1$ and $y = \frac{1}{2}$.
2. 83.
3. Father 45 years, son 15 years.
4. $k = 6$.
5. Boat 10 km/h and stream 4 km/h.
6. $\frac{3}{5}$.
7. Length 17 and breadth 9.
8. $(4, 2)$.

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