PAIR OF LINEAR EQUATIONS IN TWO VARIABLES

CROSS MULTIPLICATION METHOD

EXERCISE

Q.1 Solve the following system of equations by cross-multiplication method :

- (i) 3x 4y = 7 5x + 2y = 3
- (ii) 3x 5y = 1 7x + 2y = 16
- (iii) 2x + 3y = 8 3x + 2y = 7
- (iv) 3x 4y = 1 4x 3y = 6
- (v) 3x 4y = 10 4x + 3y = 5
- (vi) 2x 6y + 10 = 0 3x 9y + 15 = 0
- (vii) $\frac{2}{x-1} + \frac{3}{y+1} = 2$ $\frac{3}{x-1} + \frac{2}{y+1} = \frac{13}{6}, x \neq 1, y \neq -1$

(viii)
$$\frac{5}{x+y} - \frac{2}{x-y} = -1$$
 $\frac{15}{x+y} + \frac{7}{x-y} = 10; x+y \neq 0, x-y \neq 0$

Q.2 Solve the following system of equations by cross-multiplication method.

x + y = a - b; $ax - by = a^2 + b^2$

Q.3 Solve the following system of equations by cross-multiplication method -

ax + by = 1; bx + ay =
$$\frac{(a+b)^2}{a^2+b^2} - 1$$

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Q.4 Solve the following system of equations in x and y by cross-multiplication method

$$(a - b) x + (a + b) y = a^2 - 2ab - b^2$$

$$(a + b) (x + y) = a^2 + b^2$$

Q.5 Solve the following system of equations by cross-multiplications method.

 $a(x + y) + b(x - y) = a^{2} - ab + b^{2}$ $a(x + y) - b(x - y) = a^{2} + ab + b^{2}$

ANSWER KEY

1. (i) x = 1, y = -1(ii) x = 2, y = 1(iii) x = 1, y = 2(iv) x = 3, y = 2(v) x = 2, y = -1(vi) Infinite solutions (vii) x = 3, y = 2(viii) x = 3, y = 2(viii) x = 3, y = -b.

MATHS

3.
$$x = \frac{a}{a^2 + b^2}$$
, $y = \frac{b}{a^2 + b^2}$
4. $x = a + b$, $y = -\frac{2ab}{a+b}$.

5.
$$x = \frac{b^2}{2a}$$
, $y = \frac{2a^2 + b^2}{2a}$