Examples:

a)   Solve using the substitution method: $5x - 2y = 4,$
$$y = 5 - x.$$

Substitute $5 - x$ for y.

$$5x - 2y = 4$$
$$5x - 2(5 - x) = 4$$
$$5x - 10 + 2x = 4$$
$$7x = 14$$
$$x = 2$$

Then substitute 2 for x and solve for y.

$$y = 5 - x$$
$$y = 5 - 2$$
$$y = 3$$

The solution is $(2, 3)$.

b) Solve using the elimination method: $2x + 7y = -1,$
$$-x - 2y = 2.$$

Multiply the second equation
by 2 and then add.

$$2x + 7y = -1$$
$$\underline{-2x - 4y = 4}$$
$$3y = 3$$
$$y = 1$$

Then substitute 1 for y and solve for x.

$$2x + 7y = -1$$
$$2x + 7 \cdot 1 = -1$$
$$2x + 7 = -1$$
$$2x = -8$$
$$x = -4$$

The solution is $(-4, 1)$.

Solve.

1. $4x + 3y = 1,$
$x = 1 - y$ _____

2. $2x - y = 6,$
$-x + y = -1$ _____

3. $6x - y = 3,$
$4x - 2y = -2$ _____

4. $2x + 3y = 7,$
$x = 1 - 4y$ _____

5. $2x + 3y = 6,$
$x - 3y = -15$ _____

6. $7x - 5y = 4,$
$y = 3x - 4$ _____

7. $2y - 5x = -1,$
    $x = 2y + 5$ _____

8. $4x + 3y = 1,$
    $3x + 5y = -13$ _____

9. $6x - 5y = 3,$
    $4x + 3y = 21$ _____

10. $x + y = 4,$
    $3x + 4y = 10$ _____

11. $-3x + y = 2,$
    $7x - 8y = 1$ _____

12. $7x + 2y = 2,$
    $x - 2y = 14$ _____

13. $9y - 2x = -7,$
    $x - 3y = 5$ _____

14. $3x - 5y = 8,$
    $4x - 7y = 12$ _____

15. $5x + 2y = 12,$
    $3x - 4y = 2$ _____

16. $x + 4y = 7,$
    $3x + 7y = 6$ _____

17. $5x - 8y = 25,$
    $-x + 4y = -7$ _____

18. $05x + 2y = 9,$
    $4x - 15y = 2$ _____

19. $8x - 6y = 0,$

    $x + 9y = \dfrac{13}{4}$ _____

20. $\dfrac{2}{3}x + \dfrac{1}{4}y = 18,$

    $\dfrac{1}{6}x - \dfrac{3}{8}y = -6$ _____