Simultaneous Equations
Practice Questions

Solve the following systems of equations using the method of elimination.

1. $4x + y = 9$
$x - y = 1$

2. $2x - 5y = -6$
$-x + 3y = 4$

3. $-3x + 4y = 4$
$6x - 5y = 4$

4. $4x - 2y = -10$
$-3x + 8y = 14$

5. $4x + 3y = 27$
$5x - 2y = 28$

6. $-3x + 2y = -8$
$4x - 9y = -2$

7. $2x - 3y = 5$
$5x + 2y = -16$

8. $2x + 5y = -3$
$9x + 4y = -13$

9. $\frac{1}{2}x + \frac{3}{4}y = 5$
$-\frac{5}{2}x - \frac{3}{2}y = 8$

10. $\frac{1}{2}x + \frac{1}{3}y = 8$
$\frac{2}{3}x + \frac{3}{2}y = 17$

Solve the following systems of equations using the method of substitution.

11. $4x + y = 9$
$x - y = 1$

12. $2x - 5y = -6$
$-x + 3y = 4$

13. $x - 3y = 2$
$4x + 5y = -9$

14. $2x + 6y = 12$
$5x - y = -2$

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

16. $2x - y = 1$
$3x + 2y = 33$

17. $2x - 8y = 24$
$3x + 2y = 8$

18. $2x + 3y = -15$
$3x + 2y = -15$

19. $\frac{3}{2}x - 4y = 7$
$x + \frac{1}{2}y = \frac{3}{2}$

20. $\frac{3}{2}x - \frac{1}{3}y = 5$
$\frac{5}{2}x + \frac{2}{3}y = 12$

Solve the following systems of equation by any method.

21. $x - y = -5$
$x + 3y = 27$

22. $2x + 3y = 10$
$-3x + 2y = -41$

23. $3x + 2y = 16$
$4x + y = 13$

24. $4x - 3y = 5$
$9x - 2y = 16$

25. $2x - 3y = -8$
$5x + y = 14$

26. $3x + y = -2$
$-2x - 3y = 13$

27. $2x + y = 12$
$3x - 2y = 13$

28. $-3x - 5y = -8$
$11x - 2y = -2$

29. $\frac{3}{2}x + \frac{3}{4}y = 1$
$\frac{1}{10}x + \frac{3}{10}y = 4$

30. $\frac{12}{5}x - y = 2$
$\frac{3}{2}x - 4y = -9$

Solve the following word problems.

31. The sum of x and y is 16. When y is taken from x the result is 2. Find x and y.

32. In a money box of 5c and 10c coins, there are 71 coins. Their total value is \$5.60. Find the number of each type of coin.

33. Find two numbers whose difference is 8, and the sum of twice the first and 3 times the second is 32.

34. Find two numbers whose sum equals 5 and whose product equals -14.

35. Find all pairs of numbers x and y given that $x - 3y = 27$ and $xy = 30$.