ILLAWARRA TUTORING

Challenge yourself by solving systems with three variables using advanced methods such as substitution and elimination. This worksheet includes a range of problems from easy to challenging to enhance your problem solving skills.

Easy Questions

1. Solve the following system:
$$x + y + z = 6, \quad x - y = 0, \quad z = 2.$$

2. Solve the system:
$$x + y + z = 12, \quad x + y = 8, \quad x - y = 2.$$

3. Solve the system:
$$x + y + z = 9, \quad x - z = 1, \quad y = 4.$$

4. Solve the system:
$$x + y + z = 15, \quad 2x = 10, \quad y - z = 1.$$

5. Solve the system:
$$2x + y + z = 13, \quad x - y = 1, \quad x + z = 7.$$

Intermediate Questions

6. Solve:
$$x + 2y + z = 6, \quad 2x - y + 3z = 14, \quad 3x + y + 2z = 13.$$

7. Solve:
$$x + 2y - z = 1, \quad x - y + 2z = 4, \quad 3x + 2y + z = 7.$$

8. Solve:
$$\frac{1}{2}x + y + z = 8, \quad x - y + 2z = 9, \quad x + y - z = 4.$$

9. Solve:
$$3x - y + z = 2, \quad x + y + 2z = 9, \quad 2x - 3y + z = -4.$$

10. Solve:
$$2x + y + 3z = 7, \quad 4x + 2y + z = 9, \quad 3x + 4y + 2z = 10.$$

11. Solve:
$$x + y + z = 3, \quad 2x - y + 4z = 8, \quad -x + 3y + z = 2.$$

12. Solve:
$$2x + 3y - z = 5, \quad x - y + z = 2, \quad 3x + y + 2z = 7.$$

13. Solve:
$$x + 4y + z = 10, \quad 2x + y - z = 3, \quad 3x + 5y + 2z = 17.$$

14. Solve:
$$-x + 2y + 3z = 7, \quad 2x - y + z = 4, \quad x + y + z = 5.$$

15. Solve:
$$4x + 2y - z = 3, \quad x - y + z = 0, \quad 3x + y + 2z = 7.$$

16. Solve:
$$0.5x + y + z = 6, \quad x + 2y - z = 3, \quad 1.5x - y + 2z = 4.$$

17. Solve:
$$\frac{2}{3}x + y + z = 10, \quad x - \frac{1}{2}y + 2z = 8, \quad 3x + y - z = 5.$$

18. Solve:
$$3x + 4y + z = 11, \quad 2x - y + 2z = 4, \quad x + 2y - 3z = -5.$$

19. Solve:
$$x - 2y + 3z = 0, \quad 2x + y - z = 4, \quad -x + 4y + z = 5.$$

20. Solve:
$$2x + y + z = 5, \quad x - y + 2z = 4, \quad 3x + 2y - z = 7.$$

Hard Questions

21. Solve:
$$2x + 3y - z = 1, \quad 4x - y + 5z = 16, \quad -x + 2y + 3z = 4.$$

22. Solve:
$$x + 2y + 3z = 14, \quad 4x + 5y + 6z = 32, \quad 7x + 8y + 9z = 50.$$

23. Solve:
$$3x + y - 2z = 7, \quad 2x - 4y + z = -5, \quad 5x - y + 3z = 12.$$

24. Solve:
$$x + y + z = 0, \quad 2x - y + 3z = 4, \quad 4x + y + 2z = 5.$$

25. Solve:
$$5x + 3y - 2z = 1, \quad 3x - 2y + 4z = 10, \quad 7x + y + z = 8.$$

26. Solve:
$$x - y + 2z = 3, \quad 2x + 3y - z = 4, \quad 4x - y + 3z = 10.$$

27. Solve:
$$3x + 2y - z = 2, \quad 4x - y + 3z = 11, \quad -2x + 5y + 2z = 1.$$

28. Solve:
$$2x + 3y + 4z = 12, \quad 3x + 2y + z = 7, \quad x - y + 2z = 3.$$

29. Solve:
$$x + 4y + z = 9, \quad 2x - y + 3z = 13, \quad 3x + y + 2z = 10.$$

30. Solve:
$$4x + y - 2z = 1, \quad 3x - 2y + z = -2, \quad 2x + 3y + 4z = 14.$$