x + 2y - z = 0, x + y - 2z = -1, -x + 4y + 7z = 6 is consistent, and solve it.

24. Examine the consistency of the systems

$$\begin{aligned} x + y + z &= a \\ ax + by + z &= b \\ ax + b^2y + z &= 1 \end{aligned}$$

25. Solve the system of linear equations:

$$\begin{aligned} 3x_1 - 2x_2 + 2x_3 &= 10 \\ x_1 + 2x_2 - 3x_3 &= -1 \\ 4x_1 + x_2 + 2x_3 & \end{aligned}$$

26. Solve

$$\begin{aligned} (c^2 - a^2)y - bcz + bax &= 0 \\ (a^2 - b^2)z - cax + cby &= 0 \end{aligned}$$

27. Solve and discuss

$$\begin{aligned} \lambda x + y + z + u &= a \\ x + \lambda y + z + u &= b \\ x + y + \lambda z + u &= c \\ x + y + z + \lambda u &= d \end{aligned}$$

28. If a, b, c are not all zero, show that the system

$$bz - cy = a', cx - az = b', ay - bx = c'$$

is consistent or inconsistent according as aa'+bb'+cc' is zero or non zero.

29. For what values of λ the system

$$x + 2y + (\lambda + 2)z = 10 2x + 3y + (\lambda + 3)z = 16 3x + (6\lambda - l)y + 7z = 26$$

a) has no solution b) has one solution
c) has infinitely many solutions.