

Session 1

These are linear equations:

$$2x_1 + 8x_2 - 9x_3 = 45$$

$$5x + 8y = 0$$

$$\sqrt{2}x_1 + 8x_2 + 0x_3 - 400 = -9x_4$$

These are not linear equations:

$$5x - 8y + 17xy = 9$$

$$4x^2 - 6x + 5y = 23$$

$$4x_2 + 3 = \sqrt{x_1}$$

Which of these are linear equations? (Circle them.)

$$5x + 89 = -23y$$

$$6x_1 - 3x_2 + 5x_1x_2 = 123$$

$$2x_1 - 5x_2 - 7x_3 = 40$$

Write out an example of a linear equation.

What is a linear equation?

These are systems of linear equations (linear systems).

$$\begin{aligned}x - y &= 1 \\ 3x + 3y &= 12\end{aligned}$$

$$\begin{aligned}x - y &= 1 \\ 2x - 2y &= 8\end{aligned}$$

$$\begin{aligned}x - y &= 1 \\ 3x - 3y &= 3\end{aligned}$$

For which of the systems of equations can we find a pair of numbers (x, y) such that both of the linear equations are satisfied?