

# Defining Systems of Linear Equations

1. Linear equations
2. Systems of linear equations
3. Consistency
4. Matrix representations

# Linear Equations

**Definition.** A *linear equation* in the variables  $x_1, x_2, \dots, x_n$  is an equation of the form

$$a_1x_1 + a_2x_2 + \dots + a_nx_n = b$$

where  $a_1, a_2, \dots, a_n, b$  are real numbers ( $\mathbb{R}$ )