System of Linear equations

$$a_{11}x_1 + a_{12}x_2 + \ldots + a_{1n}x_n = b_1$$

$$a_{21}x_1 + a_{22}x_2 + \ldots + a_{2n}x_n = b_2$$

$$\vdots$$

$$a_{m1}x_1 + a_{m2}x_2 + \ldots + a_{mn}x_n = b_m$$

Does a system have a solution?
How many solutions are there?
What are its solutions?

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Defining Systems of Linear Equations

1. Linear equations

2. Systems of linear equations

3. **Consistency**

4. Matrix representations