Reading Questions 1

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1. Algebra is the art of solving equations and system of equations.

2. Linear algebra is the art of solving systems of linear equations.

3. Solving systems of linear equations often arises in other areas of math, statistics, physics, astronomy, engineering, computer science, and economics.

4. Write out a system of equations.

Section 1.1 Introduction to Linear Systems (Part 1)

Linear Systems

P 1. Is the following set of equations a linear system?

$$1 = x + y \quad (1)$$
$$1 = 10x \quad (2)$$

P 2. Give an example of a set of equations which is not a linear system.

P 3. Find all solutions of the linear system by **eliminating variables**.

$$\left|\begin{array}{rcr} x + 5y & = & 7 \\ -2x - 7y & = & -5 \end{array}\right|$$

P 4. Find all solutions of the linear system by **eliminating variables**.

$$\left|\begin{array}{rcr} x + 2y + 3z & = & 6 \\ x + 1y + 2z & = & 6 \\ x + 2y + z & = & 4 \end{array}\right|$$

Geometric Interpretation

P 5. Use a graph to find the number of solutions to the following system of equations.

$$y + 2 = 20$$
$$y + x = 16$$