

$$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Math League: the 5th week

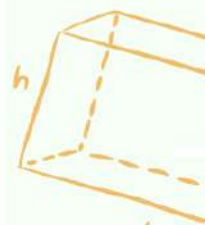
The history of equations begins in ancient civilizations, where the Babylonians and Egyptians used geometric methods to solve problems involving unknowns. The Greeks, particularly Diophantus, made significant strides by developing systematic approaches to solving polynomial equations, earning him the title "father of algebra." The Islamic Golden Age saw Al-Khwarizmi formalize algebraic processes, introducing concepts that became foundational in mathematics. During the Renaissance, the advent of symbolic notation by mathematicians like René Descartes transformed equation-solving techniques, leading to the development of modern algebra. This historical progression has shaped the complex and versatile equations used in contemporary mathematics.

If $x^2 + y^2 = 10$,
 $x + y = 7$

Then $\frac{1}{x} + \frac{1}{y} = ??$



$$V = \pi r^2 h$$



$$V = lwh$$

Equations serve as a fundamental tool in mathematics, representing relationships between quantities and allowing for the resolution of unknowns. The concept of equations arises from the need to solve problems involving comparisons, measurements, and patterns. By setting up equations, we can systematically analyze and determine values that satisfy given conditions. This structured approach transforms abstract relationships into solvable problems, making equations essential in both theoretical and practical applications. Ultimately, equations provide a powerful framework for understanding and solving a wide range of mathematical and real-world challenges.

Check those two:

$$\frac{x+3}{2022} + \frac{x+2}{2021} + \frac{x+1}{2020} = 3$$

Problem

Solve for x : $\frac{5}{x-1} + \frac{1}{4-3x} = \frac{3}{6x-8}$

$$x = ??$$



$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

