

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

Math League: the 1st week

In early mathematics, "raising a number to a power" was initially a concept tied to repeated multiplication, a method formalized by ancient mathematicians like the Babylonians and Greeks. By the 17th century, scholars like René Descartes and Isaac Newton refined this idea, making it a fundamental aspect of algebra and calculus. Today, exponents are crucial for expressing large numbers efficiently and solving complex equations.

TRY WITH THIS ONE FIRST:

$$(\sqrt{50} - 7)^{475} \times (\sqrt{50} + 7)^{475} = ?$$

It may seem complicated but it only needs the fundamental concepts of exponential

Exponential functions are used in real life, like in calculating interest in your bank account, how fast a population grows, or how quickly something decays. So those two equations may help you managing your finance. Also, the number of people in a city or country can grow rapidly over time, especially if the birth rate is high.

This growth is often modeled using exponential functions. Even, When a virus spreads through a population, the number of new infections can increase exponentially. This is why outbreaks can grow quickly and why early intervention is crucial.

Give it a try :

IF

$$5^{x-1} = 11$$

THEN SIMPLIFY

$$5^{x+1} = ??$$

$$a^2 = a + 1$$

$$b^2 = b + 1$$

$$a^5 + b^5 = ?$$

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