## What is Algebra

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Algebra Basics for 100.

Variables $x, y, z$ usually represent:

- Days of the week
- People you know
- Calories
- Time
- Unknown numbers
Algebra Basics for 200.

\( n \) is usually used to symbolize

- a name
- a coefficient
- a fraction
- a natural number
- a complex number
Algebra Basics for 300.

$a, b, c, d$ usually symbolize

values
functions
variables
constants
parabolas
Algebra Basics for 400.

Which of the following is not an algebraic operation?

Addition
Multiplication
Division
Subtraction
Solving
History for 100.

”Algebra = Calculating by Balancing” in :

- Latin
- Greek
- French
- Arabic
- English
History for 200.

Algebra does NOT deal with

- algebraic expressions
- linear equations
- quadratic equations
- polynomials
- differential equations
History for 300.

Which of the following equations is not algebraic?

\[ 0 = 4x - 4y + 3z \]
\[ 0 = 4x^2 - 4x + 3 \]
\[ x^2 + y^2 = 1 \]
\[ \cos x = 1 \]
\[ 0 = x^3 - 4x^2 - 4x + 3 \]
History for 400.

Which of the following curves is not studied by algebra?

a line
a parabola
a cubic curve
a spiral
a hyperbola
Laws for Real Numbers for 100.

The equation $a + b = b + a$ is called

- Addition Property
- Commutative Property of Multiplication
- Commutative Property of Addition
- Associative Property
- Easy Property
Laws for Real Numbers for 200.

The equation $ab = ba$ is called

- Multiplication Property
- Symmetry Property
- Cumulative Property of Multiplication
- Associative Property
- Commutative Property of Multiplication
Laws for Real Numbers for 300.

The equation \( a(b + c) = ab + ac \) is called

- Multiplication Law for Three Numbers
- Parenthesis Law
- Distributive Law
- Associative Law
- Commutative Law
Laws for Real Numbers for 400.

The equation $a(bc) = (ab)c = abc$ is called

- Multiplication Property for Three Numbers
- Parenthesis Property
- Associative Property of Addition
- Associative Property of Multiplication
- Commutative Property of Multiplication
Stupid questions for 100.

0 is called an identity for addition, because $a + 0 =$

0
1
$a$
10
$10a$
Stupid questions for 200.

1 is called an identity for multiplication, because it satisfies $a \cdot 1 = 1$.

1
1/a
1/a
0
a
a₁
Stupid questions for 300.

\[ a^{-1} \] is called and an inverse element for \( a \), because
\[ a \times a^{-1} = \]
\[ a \]
\[ a^2 \]
\[ 1 \]
\[ 0 \]
\[ 1/a \]
Stupid questions for 400.

An equal sign in means

- the equation is always true
- the equation is true if all variables are zero
- the equation is true for any values substituted for variables
- the equation is true for integers
- the equation is true only for numbers that solve the equation
Polynomials for 100.

The degree of $y = -6x^4 + 3x^3 + 2x^2 + 7x + 2$

6
-6
2
4
3
Polynomials for 200.

Let \( y = 3x^3 + 2x^2 - 7x - 5 \). when \( x = 0 \) then \( y = ? \)

\[
\begin{align*}
2 \\
3 \\
-7 \\
-5 \\
0
\end{align*}
\]
Polynomials for 300.

The graph of \( y = -2x^2 + 7x + 2 \) is:

- a line
- a hyperbola
- a cubic curve
- a parabola
- a point
Let $y = -5x^2 + 7x + 2$. Then when $x$ is very large

- $y = 0$
- $y$ is very small
- $y$ is constant
- $y$ is negative
- $y$ is very large positive