

## Algebra Trivia Trivia: Questions, Answers, and Facts Printable Trivia Pack

Algebra Trivia trivia explores the language of patterns, equations, and unknowns that has been central to mathematics for centuries. From early problem-solving traditions in ancient Babylon to the symbolic methods refined in the Islamic world and Europe, algebra has evolved into a foundation of science, engineering, and everyday reasoning. Expect a mix of approachable facts, clever surprises, and tougher challenges about one of math's most influential concepts.

### HARD ALGEBRA TRIVIA

1. In the landmark 19th-century result on solvability by radicals, what year is attached to Abel's proof that the general quintic cannot be solved that way?

Answer: 1824

2. Which theory links field extensions to groups of automorphisms, forming the classic bridge between polynomial equations and symmetry?

Answer: Galois theory

3. A set with a binary operation is not a group unless four requirements are met. Which list is the correct one?

Answer: Closure, associativity, an identity element, and inverses

4. What is the name for a group whose operation commutes?

Answer: An abelian group

5. Fill in the missing structure: a commutative ring in which every nonzero element has a multiplicative inverse is a \_\_\_\_\_?

Answer: field

6. True or false: the integers modulo 6 form a field.?

Answer: False

7. A vector space is defined over what kind of algebraic object?

Answer: A field

8. What is the term for a linearly independent spanning set of a vector space?

Answer: A basis

9. If someone asks for the number of vectors in a basis of a vector space, what invariant are they asking for?

Answer: The dimension

10. For the  $2 \times 2$  matrix  $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ , what expression gives its determinant?

Answer:  $ad - bc$

11. A square matrix has a nonzero determinant. What does that tell you exactly about the matrix?

Answer: It is invertible

12. Which scalar  $\lambda$  is being described by the relation  $Av = \lambda v$  for some nonzero vector  $v$ ?

Answer: An eigenvalue

13. What matrix statistic is obtained by adding up all diagonal entries of a square matrix?

Answer: The trace

14. Rank is defined here as the dimension of which associated space of a matrix?

Answer: Its column space

#### FUNNY ALGEBRA TRIVIA

1. Which algebra VIP changes absolutely nothing when added, basically showing up to the party and touching no snacks?

Answer: Zero, the additive identity.

2. What do mathematicians call the number 1 when it keeps multiplication from getting dramatic, since  $a \cdot 1 = a$ ?

Answer: The multiplicative identity.

3. If a number runs into its exact opposite in a dark algebra alley, what total do they make together?

Answer: 0

4. A nonzero number and its reciprocal are the ultimate cleanup crew. What do they multiply to make?

Answer: 1

5. If  $a + b$  suddenly swaps seats and becomes  $b + a$ , which property is being wonderfully unbothered by the rearranging?

Answer: The commutative property of addition.

6. When  $ab$  turns into  $ba$  and nobody files a complaint, which multiplication rule is on duty?

Answer: The commutative property of multiplication.

7. In addition, if the parentheses move from  $(a + b) + c$  to  $a + (b + c)$ , what property is calmly doing yoga in the corner?

Answer: The associative property of addition.

8. Multiplication can also reshuffle its parentheses without changing the result. What is the name of the rule behind  $(ab)c = a(bc)$ ?

Answer: The associative property of multiplication.

9. What do you call an expression built from variables, coefficients, and nonnegative integer exponentsâ basically algebra wearing a sensible outfit?

Answer: A polynomial.

10. The polynomial  $7x^5 + 2$  is not trying to be mysterious. What is its degree?

Answer: 5

11. True or false: In many algebra texts, the zero polynomial gets a clearly defined degree and everybody agrees on it.?

Answer: False

12. If a function looks in the mirror and says, 'Yep, same result,' because  $f(-x) = f(x)$ , what kind of function is it?

Answer: An even function.

13. If a function flips the sign when  $x$  flips sign, following  $f(-x) = -f(x)$ , what is it called?

Answer: An odd function.

#### FUN ALGEBRA TRIVIA

1. When algebra students say 'FOIL,' what do the four letters stand for?

Answer: First, Outer, Inner, Last.

2. Which formula rescues you when a quadratic refuses to factor nicely?

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

3. In a quadratic expression  $ax^2 + bx + c$ , what is the name of the part  $b^2 - 4ac$ ?

Answer: The discriminant.

4. True or false: If a quadratic's discriminant is zero, it has one repeated real root.?

Answer: True

5. A positive discriminant means a quadratic gets what kind of root situation?

Answer: Two distinct real roots.

6. If the discriminant drops below zero, what kind of roots does the quadratic have?

Answer: Two nonreal complex roots.

7. In the line equation  $y = mx + b$ , which letter is the slope's secret identity?

Answer:  $m$

8. In  $y = mx + b$ , which symbol marks the  $y$ -intercept?

Answer:  $b$

9. A pair of linear equations in two variables can end in three different ways. What are they?

Answer: One solution, no solution, or infinitely many solutions.

10. When two graphs bump into each other on the coordinate plane, what is that meeting point called?

Answer: An intersection.

11. What is the factored form of  $x^2 - 9$ ?

Answer:  $(x - 3)(x + 3)$

12. Pop quiz for binomials: how does  $(a + b)^2$  expand?

Answer:  $a^2 + 2ab + b^2$

13. Which expression is equal to  $(a + b)(a - b)$ ?

Answer:  $a^2 - b^2$

#### ALGEBRA FAMILY TRIVIA

1. What Arabic term gave us the word algebra?

Answer: al-jabr

2. Who wrote a foundational algebra book around 820 CE?

Answer: Muhammad ibn Musa al-Khwarizmi

3. Which mathematician is often called the Father of Algebra?

Answer: Diophantus

4. What is the title of Leonhard Euler's algebra book?

Answer: Elements of Algebra

5. Which notation did Leonhard Euler help popularize for a function?

Answer:  $f(x)$

6. Cardano published which famous work in 1545?

Answer: Ars Magna

7. While building a busy career, Cardano also worked as a physician in which city?

Answer: Milan

8. True or false: François Viète served the king of France.?

Answer: True

9. Who was an early pioneer in matrix algebra?

Answer: Arthur Cayley

10. Which mathematician died in 1829 at just age 26?

Answer: Niels Henrik Abel

11. In what year did Évariste Galois die after a duel?

Answer: 1832

12. Which mathematician made major contributions to abstract algebra?

Answer: Emmy Noether

#### EASY ALGEBRA TRIVIA

1. What do you call an algebraic expression with exactly one term?

Answer: A monomial.

2. A polynomial with exactly two terms is called what?

Answer: A binomial.

3. If a polynomial has three terms, what is it called?

Answer: A trinomial.

4. What degree does a quadratic equation have?

Answer: Degree 2.

5. A cubic equation has what degree?

Answer: Degree 3.

6. Which type of equation has degree 4?

Answer: A quartic equation.

7. What is the special number  $i$  defined by the rule  $i^2 = -1$  called?

Answer: The imaginary unit  $i$ .

8. What is a rectangular array arranged in rows and columns called?

Answer: A matrix.

9. In the expression  $2x + 3$ , which symbol is the variable?

Answer:  $x$

10. In  $5y$ , what is the coefficient?

Answer: 5

11. What do you call a math statement that says two expressions are equal?

Answer: An equation.

12. What is a value called if it makes an equation true?

Answer: A solution.

13. Which equation form is written as  $ax^2 + bx + c = 0$ ?

Answer: The standard form of a quadratic.

Source: <https://triviagong.com/trivia/algebra-trivia-trivia>