

## Algebra questions you should be able to answer

1. What is the general strategy used to evaluate algebraic expressions?
2. What is the general strategy used to solve linear equations?
3. Name five problem solving strategies that should be used in teaching.
4. How is adding/subtracting polynomials (combining like terms) related to arithmetic?
5. Write the formula for combining rational expressions.
6. FOIL, what do the letters represent and from where was it derived?
7. To multiply 53 by 47, what special product in algebra would allow you to compute that mentally?
8. Write the formula for slope.
9. How was the Point-Slope form of a line derived?
10. Write the Point-Slope form of a line.
11. How was the Slope-Intercept of a line derived?
12. Write the Slope-Intercept form of a line.
13. How was the General Form of a line derived?
14. Write the General Form of a line.
15. Using the General Form, how do you find the x and y- intercepts and slope by inspection?
16. Geometrically, what are the x and y-intercepts?
17. Which equation, according to Hanlon, should be used for “finding an equation of a line” and why?
18. If two lines are parallel, what is the relationship in their slopes?
19. If two lines are perpendicular, how are their slopes related?
20. Describe a line that has no slope.

21. In graphing linear inequalities, can you tell what side of the line to shade by inspection? How?
22. Write the mathematical definition of absolute value.
23. When solving an equation involving absolute value, why are there generally two solutions?
24. When presented with a problem you do not recognize, what strategy might best be suited to solve the problem?
25. Name the five steps suggested by Hanlon for students to solve word problems.
26. What's the true value in learning and understanding the Property of real Numbers?
27. Name three methods of solving quadratic equations.
28. What property was the factoring to solve quadratic and higher degree equations based on?
29. How was the Quadratic Formula derived?
30. Write the Quadratic Formula.
31. Why are solutions referred to as zeroes?
32. How do you "complete the square"?
33. Draw the schematic for factoring polynomials.
34. What method of factoring should always be tried first?
35. If the coefficient of the quadratic term of a trinomial is not one, what method of factoring should be employed?
36. Describe an alternate method for the previous question.
37. Under what conditions should the "Difference of 2 Squares" be used to factor a polynomial?
38. The division algorithm learned in elementary school is used for dividing polynomials in algebra, what other benefit does it have in algebra?
39. When adding algebraic fractions, what rule is best employed?

40. If you are adding algebraic fractions that have a common factor, what might be a good method of finding a common denominator?
41. When dealing with algebraic fractions, why is it important to know and check the value of the variables?
42. When you are solving a system of linear equations, describe the answer.
43. Name three methods for solving systems of linear equations.
44. One of the methods used in solving systems of equations is to add the equations together, why is that occurring and what property of real numbers allows that to happen?
45. When solving systems of linear equation sometimes you have multiply both sides of an equation by a number, what does that do to the graph of the equation?
46. Give an everyday example that can be used to describe a function.
47. Write the formal definition of a function.
48. Would the formula used in calculating your phone bill be considered a function?
49. In a formula, the numbers you substitute for the variable are called the \_\_\_\_\_.
50. The possible vales for that function are called the \_\_\_\_\_.
51. Solve:  $7x - (2 + x) = 2(3x - 1)$
52. Solve:  $|3x - 1| - 2 = 15$
53. Solve:  $-8 < 2x + 5 < 11$
54. Solve:  $3x - 2y = 7$   
 $5x + y = 3$
55. Solve:  $15 - 2x = x^2$
56. Solve:  $3x^2 + 5x = 4$
57. Graph:  $y = 3x - 4$
58. Graph:  $5x - 2y = 10$

