

Students entering Geometry 1 are expected to be able perform the following algebra skills upon entrance into the course:

**Evaluate Expressions, Solve an Equation, Write Equations of Lines, Graph Linear Functions, Solve and Graph Inequalities, Solve Linear Systems of Equations, Simplify Exponential Expressions, Factor Polynomials, Solve Quadratic Equations by both Factoring and using the Quadratic Formula, Simplify Radical Expressions, and Simplify Rational Expressions.**

Practice for these skills can be found below, followed by the answers. Additional practice and review of these skills can also be found by going to [www.classzone.com](http://www.classzone.com) and completing the following

- 1) SELECT YOUR SUBJECT      choose **HIGH SCHOOL MATH**
- 2) SELECT YOUR STATE        choose **ILLINIOS**
- 3) FIND YOUR BOOK            click **GO**

Choose **Algebra 1 2007**, which will take you to a page where there is additional practice. The skills you are expected to enter the course with can be found in the chapters 1 – 12 of this book. [Help with Math](#), [Practice](#), [Practice](#), [Practice](#), and [Assessments](#) are all categories you may choose for additional practice.

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### Algebra Practice

Be prepared to show your work for these type of problems.

Evaluate the expression.

- |                                       |                                |                                    |
|---------------------------------------|--------------------------------|------------------------------------|
| 1. $2^4 \cdot 3 - 16 \div 4$          | 2. $ -125  - 34$               | 3. $\pm\sqrt{2025}$                |
| 4. $- x  + 9$ when $x = -6$           | 5. $- x  + 2.6$ when $x = 2$   | 6. $2^5 \cdot 2 - 4 \div 2$        |
| 7. $24 \div 6 + (9 - 6)$              | 8. $5[(6 - 2)^2 - 5]$          | 9. $3y^2 - 2$ when $y = -1$        |
| 10. $40 - \frac{32}{r}$ when $r = -4$ | 11. $3x - 2 + x$ when $x = -5$ | 12. $x^2 \div 3 - 12$ when $x = 9$ |

Solve the equation.

- |                        |                         |                      |
|------------------------|-------------------------|----------------------|
| 13. $7 - 2x = 13$      | 14. $-8x + 15 + 5x = 9$ | 15. $5(2x + 3) = 4x$ |
| 16. $13y + 16 - y = 4$ | 17. $-(w + 1) = w + 3$  |                      |

Write an equation of the line described. Final answer should be in slope-intercept form.

- |   |                                      |
|---|--------------------------------------|
| 18. Line through (6, 3) and (-2, 3)                                 | 19. slope: 5 and y-intercept: -1     |
| 20. Line through (1, -10) and (-5, 2)                               | 21. Line through (-6, 1) and (3, -5) |
| 22. Line through (8, 3) and perpendicular to $y = \frac{1}{2}x + 2$ |                                      |
| 23. Line through (2, -4) and parallel to $y = -x - 7$               |                                      |

Solve the inequality

- |                         |                             |                          |
|-------------------------|-----------------------------|--------------------------|
| 24. $1 - 4n < -11$      | 25. $5b - 7 \leq 7b - 5$    | 26. $12 < z + 9 \leq 16$ |
| 27. $\frac{x}{-3} > 12$ | 28. $4 \leq 2c + 7 \leq 21$ |                          |

Solve the linear system.

- |                                    |   |  |
|------------------------------------|---|--|
| 29. $y = 5x - 4$<br>$-4x + y = -2$ | 30. $x - 4y = -44$<br>$-3x + 12y = 132$ | 31. $-4x + 7y = -33$<br>$-3x + 2y = -15$ |
|------------------------------------|---|--|

Simplify the expression.

32.  $(-9r)^3$

33.  $(2p^4)^3 \cdot p^7$

34.  $\frac{(3x)^4 y}{xy^3}$

35.  $(-9x^3)^2 \left(\frac{-1x^6}{4}\right)$

36.  $\frac{(3x)^{-3} y^3}{x^2 y^{-1}}$

Factor the polynomial completely.

37.  $a^2 - 15a - 54$

38.  $-3b^2 - 22b - 7$

39.  $4f^2 + 4fg + g^2$

40.  $p^2(p-5) + 9(5-p)$

Solve the equation.

41.  $(x+7)(x-3) = 0$

42.  $9x^2 - 28x + 3 = 0$

43.  $8x^2 + 7 = 36x - 9$

44.  $\sqrt{x+8} + 10 = 2$

Simplify the radical expression.

45.  $\sqrt{20}$

46.  $\sqrt{96}$

47.  $\sqrt{32m^5}$

48.  $\sqrt{50}(\sqrt{18})$

49.  $\sqrt{3b^3} \cdot \sqrt{18b}$

50.  $\sqrt{\frac{4}{49}}$

51.  $\frac{2}{\sqrt{2}}$

52.  $\sqrt{\frac{8}{3n^3}}$

53.  $2\sqrt{2} + 6\sqrt{2}$

54.  $(4 - \sqrt{2})(5 + \sqrt{2})$

Simplify the expression, if possible.

55.  $\frac{42x^4}{3x^2}$

56.  $\frac{2y-8}{4-y}$

57.  $\frac{z^2 - 4z - 77}{z^2 - 13z + 22}$

.....  
**ANSWER KEY!**

1. 44 2. 91 3.  $\pm 45$  4. 3 5. 4.6 6. 62 7. 7 8. 55 9. 1 10. 48 11. -22 12. 15  
13. -3 14. 2 15. -2.5 16. -1 17. -2 18.  $y = 3$  19.  $y = 5x - 1$   
20.  $y = -2x - 8$  21.  $y = \frac{-2}{3}x - 3$  22.  $y = -2x + 19$  23.  $y = -x - 2$  24.  $n > 3$   
25.  $b \geq -1$  26.  $3 < z \leq 7$  27.  $x < -36$  28.  $\frac{-3}{2} \leq c \leq 7$  29. (2, 6) 30. All Real #'s  
31. (3, -3) 32.  $-729r^3$  33.  $8p^{19}$  34.  $\frac{81x^3}{y^2}$  35.  $\frac{-81x^{12}}{4}$  36.  $\frac{y^4}{27x^5}$   
37.  $(a - 18)(a + 3)$  38.  $-(3b + 1)(b + 7)$  39.  $(2f + g)^2$   
40.  $(p - 5)(p - 3)(p + 3)$  41. -7, 3 42.  $\frac{1}{9}, 3$  43.  $\frac{1}{2}, 4$  44. No solution  
45.  $2\sqrt{5}$  46.  $4\sqrt{6}$  47.  $4m^2\sqrt{2m}$  48. 30 49.  $3b^2\sqrt{6}$  50. 2/7  
51.  $\sqrt{2}$  52.  $\frac{2\sqrt{6n}}{3n^2}$  53.  $8\sqrt{2}$  54.  $18 - \sqrt{2}$  55.  $14x^2$   
56. -2 57.  $\frac{z+7}{z-2}$