

Pre AP Algebra II

Name \_\_\_\_\_

Period \_\_\_\_\_ Assignment# 1

## Pre AP Algebra II Review

This review is intended for students entering Pre AP Algebra II. It must be completed and turned in to your teacher on the first day of school.

You are required to use the following guidelines.

1. All work is to be done neatly and legibly. No credit is given for anything that is unreadable.
2. All problems are to be done on notebook paper.
3. All graphs are to be done on graph paper using a straight edge.
4. All work should be done in pencil.
5. Your writing should sit on the blue lines of the notebook paper. **Do not** try to squeeze two lines of work in one space.
5. If you make a mistake, erase it.
6. Do not write in the margins of the paper.
7. You are allowed to write on the back of both the notebook paper and the graph paper.
8. Do not put more than two problems across the page.
9. Skip one line between problems.
10. You are allowed to put a maximum of four graphs on each side of the graph paper. Fold your graph paper in half lengthwise and widthwise. Unfold it and the creases will mark the areas that will divide your graph paper evenly.
11. Make sure your name is on each page.
12. When you finish, staple it together in this order:
  - a. this cover page
  - b. your notebook paper
  - c. your graph paper



## ALGEBRA I REVIEW

Using correct algebraic form, work all of the following problems on notebook paper.

Use the distance formula,  $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ , to find the distance between each pair of points.

- 1) A(2,3) and B(5,7)      2) X(-1,-2) and Y(7,4)      3) C(5,-4) and D(-3,1)  
 4) R(-1,2) and T(3,6)

Simplify. Assume that no variable equals zero.

- 5)  $\sqrt{3}(2 + \sqrt{6})$       6)  $3\sqrt{12} + 3\sqrt{18} - 2\sqrt{27}$       7)  $a - 3(a - 2)$       8)  $\sqrt{20c^2d^3}$   
 9)  $(2b^3 - 1)^2$       10)  $(2z - 6)(3z + 2)$       11)  $(2\sqrt{3} - 1)^2$       12)  $(2r^2t)^2(3rt^3)$   
 13)  $\frac{(8m^3n^5)^2}{(-4m^4n^3)^2}$       14)  $7(3c - 2) + 6 - 5c$       15)  $(2 + 3)2^2 + 8 + 3$   
 16)  $(2\sqrt{3} + 3\sqrt{2})(3\sqrt{3} - 2\sqrt{2})$       17)  $-\frac{2}{3}g^2h(12gh^3 - 3h)$       18)  $(8x^3 + 27) + (2x + 3)$   
 19)  $(9p^2 - 3p + 1)(3p + 1)$       20)  $(2a^2b - 3c)(2ab^2 + 3c)$   
 21)  $\frac{36w^5 - 48w^3 + 12w^2}{-12w^2}$

Write an equation, inequality, or system for each problem. Solve.

- 22) Find the first of three consecutive integers. The product of the first and the second is 34 less than the square of the third.  
 23) Mae's scores on three math tests are 81, 92, and 86. What is the lowest she can get on the fourth test to have an average greater than 85?  
 24) The length of a rectangle is 5 m longer than the width. What are the dimensions if its area is  $36 m^2$

Factor completely. If the polynomial cannot be factored, write "prime."

- 25)  $16x^2 - 9y^2$       26)  $t^2 + 2t - 35$       27)  $c^2 - 13c + 36$       28)  $6m^2 + 5m - 6$   
 29)  $6a^3 - 24ab^2$       30)  $8a^3b + 12a^2b^2 - 4a^2b$       31)  $rt^2 - 9r + t^3 - 9t$

Solve each equation, inequality, or system. Assume that no denominator is zero.

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

- 32)  $\frac{1}{3}a = 5$       33)  $-\frac{7}{4}p = -\frac{5}{8}$       34)  $\frac{2}{5}x = \frac{4}{7}$       35)  $0.2x + 3.9 = 1.5$   
 36)  $\frac{3}{5}r + 10 = 19$       37)  $2 - 3(a - 4) = 2a$       38)  $2y^2 - 3y = 27$       39)  $8 - 5t \geq 13$   
 40)  $c^2 + 5c = 5c + 4$       41)  $\begin{cases} 2x + 3y = 5 \\ 5x + 3y = 11 \end{cases}$       42)  $9x^2 = 18$   
 43)  $\begin{cases} b = 2a + 1 \\ a + 3b = 30 \end{cases}$       44)  $d^2 - 6d = 16$       45)  $3x^2 = 2x + 5$   
 46)  $p - 5(p - 2) + (p - 3) = 2$



Find the slope of a line that contains the given points.  $m = \frac{y_2 - y_1}{x_2 - x_1}$

47) A(3,2); B(4,6)

48)  $c(-\frac{1}{2}, 0); D(\frac{3}{4}, 1)$

Are the following true or false?

49)  $-.013 > -.015$  50)  $257.023 < 257.0023$

51)  $-58 > -23$

52)  $-9$  is an integer

53) 5.14326544323... is a rational number

Simplify.

54)  $-3 - -8$  55)  $-94 - 50$  56)  $0 - 6$  57)  $-7 + 4$  58)  $\frac{4}{9} + \frac{1}{6}$  59)  $\frac{5}{6} - \frac{3}{4}$

60)  $\frac{7}{9} + \frac{3}{8}$  61)  $\frac{11}{12} - \frac{7}{10}$  62)  $-\frac{2}{9} \cdot \frac{1}{3}$  63)  $-\frac{7}{9} \div -\frac{1}{9}$  64)  $\frac{2}{3} \cdot 9$

65)  $\frac{5}{18} * \frac{3}{10}$  66)  $(-12)(-4)$  67)  $36 \div -12$  68)  $(30x^2)(2x^4)$

69)  $2(5x^2 - 3x) - 4(6x^2 - 2x)$  70)  $|15 - 23| - |34 - 28|$

71)  $8 + 2 \cdot 6 - 10 + 4 \cdot 2 + 4$  72)  $\frac{28 - 2 \cdot 4}{2 \cdot 2} - \frac{7 \cdot 2 + 1}{5}$

Evaluate each expression using the value given.

73)  $5a - 2a^2 + 3a^3; a = 3$  74)  $\frac{3d - 5}{d} - \frac{4 + d}{d - 2}; d = 5$  75)  $|x + y|; x = 3, y = -\frac{1}{2}$

76)  $5 - (y - z); y = -\frac{1}{2}, z = -4.1$  77) Solve for x:  $2x - 5 + 4(6 - 3x) = 7(4 - x) - 3(x + 9)$

Write an algebraic expression or a sentence for each phrase.

78) four times a number decreased by eight

79) the square of a number increased by 20

80) four times a number decreased by two is less than twice the number decreased by seven

Given the domain  $\{-1, 0, 2\}$  determine the range.

81)  $y = 3x + 5$  82)  $y = 2x - 3$  83)  $y = 9 - 2x$

Solve and graph the solution set.

84)  $2t + 3 > 17$  85)  $4 - 3t \geq -14$  86)  $2(3t - 8) < 4(t - 5)$  87)  $-5(t + 3) \leq 3t + 2$

Graph each equation.

88)  $y = -3x + 2$  89)  $2x + y = 5$  90)  $-3x + 2y = 6$

Write an equation of the line with the given slope and y-intercept.

91)  $m = 2, b = -3$  92)  $m = -4, b = 5$  93)  $m = -2, b = -7$

Write an equation of the line parallel to the given line and with the given y-intercept.

94)  $y = 2x - 3; b = -2$  95)  $y = 3x + 5; b = 4$

Write an equation of the line perpendicular to the given line and with the given y-intercept.

96)  $y = -3x + 2; b = 4$  97)  $y = 2x - 5; b = -2$

Write in slope-intercept form the equation of each line.  $y - y_1 = m(x - x_1)$

98)  $m = 2$ , passes through (3,4) 99) passes through (-2,5) and (4,6)

