Algebra 1 Pre AP   Name_____

Summer Assignment

The following problems cover many of the skills and ideas you are expected to use fluently in Algebra 1 Pre AP. They are a review of concepts you have learned in previous math courses. While you may use resources, including the internet to review how to work the problems, you are expected to be able to work them without the use of a calculator. These concepts will be assessed during the first week of school. Your work will be due at that time as well.

Simplify each expression, showing all steps on a separate sheet. Leave your fractions as fractions, in improper form when applicable. Answers will be posted the week before school here: https://sites.google.com/a/staff.lisd.net/algebra-1-pap2/home

1. $\sqrt{144}$ + 6 x 3

2. .8 + 3x5

3. 9 x 3 - $\sqrt{49}$

4. $|7 - 12|$

5. (-4) + (-2) – (-7)

6. $|-12|$ - $|-15|$

7. $4(5 - 2)^2 + 6$

8. (-2)(5)(-4)

9. 7 x .21

10. .62 x (-.2)

11. $\frac{5}{3}$ + $\frac{2}{5}$

12. $\frac{7}{8}$ x $\frac{1}{3}$

13. $15.\,271 - 13.\,061$

14. $1.44 \div .06$

15. -$2\frac{1}{4}$ ÷ $\frac{1}{3}$

16. $2.302 - 1.75$

17. 6 x .921

18. $\frac{-55}{35}$

19. (-5) - (-4) + (-3)

20. $\frac{5}{6}$ + $2\frac{1}{3}$

21. $4\frac{2}{3}$ + $1\frac{1}{2}$

22. $4 - 6$ x $2 + \sqrt{196}$

23. 7.234 + (-3.42)

24. 5^2 - $\sqrt{121}$

Define and give an example of each term:

25. Absolute value   26. Reciprocal   27. Variable   28. Base (of a power)
29. Exponent   30. Expression   31. Equation   32. Inequality
33. Coefficient   34. Integer   35. Rational Number
36. Irrational number 37. Real number

Evaluate the expression:

38. $2x + 3y - 1$ for $x = -2$ and $y = \frac{1}{4}$ 39. $(x + y)(2x - 3y)$ for $x = 2$ and $y = -3$

40. $5xy - 6x^2y$ for $x = -2$ and $y = -1$ 41. $[(15 - 3x) + w] \div x$ for $x = 5$ and $w = \frac{1}{2}$

Write an algebraic expression for the verbal expression or problem given.

42. the product of a number and two   43. The sum of five and six times a number

44. eleven less than three times a number   45. A number squared plus seven

Solve.

46) $6 - 3x = 12$ 47) $11 = \frac{x}{3} - 1$ 48) $7 - 2(1 - x) = -3$

49) $3x + 5 - x = 15 - (3x - 5)$ 50) $\frac{5x}{4} = 10$ 51) $5 = \frac{2x}{3} - 7$

52) $\frac{12}{x} = \frac{3}{8}$ 53) $\frac{6+x}{12} = \frac{15-x}{24}$ 54) $3 > 3x - 7$

55) $7x < 4x + 9$ 56) $6x - (-2x) = 24$ 57) $-x + 6 = 5$

Find the rate of change, or slope, between the two given points.

58) $(-2, 7)$ and $(5, -2)$ 59) $(-1, -2)$ and $(3, 4)$ 60) $(0, 7)$ and $(6, -9)$

61) $(-2, 5)$ and $(3, 5)$ 62) $(4, -1)$ and $(4, 6)$ 63) $(9, 1)$ and $(-2, 3)$

Solve the following equations for y.

64. $2x + 3y = 12$ 65. $6x - 4y = 12$ 66. $9 + 3y = 6x$

67. $12 + 5x = -2y$ 68. $y - 2 = 3(x + 1)$ 69. $y - 4 = -2(x - 4)$

Write an equation and solve for the value.

70) What percent of 80 is 28?   71) What percent of 90 is 36?

72) What number is 75% of 164?   73) 21 is 37% of what number?

74)Lauren has a coupon for 20% off purchase at a local electronics store. She wants to buy an Ipod with a list price of $179. What would her purchase price before tax?

75) If the sales tax rate for the previous problem is 7.25%, what is her total cost?

76) Matt weighed 189lb. He now weighs 167 lb. What was the percent change of his weight?

77) You are shopping for a new jacket and find that the store has jackets for 35% off. Write an equation representing the cost C before taxes where P represents the original price.

78) You have chosen a jacket that you like from the store above. The sale price of the jacket is $55.25. What was the original price?

Combine the like terms to simplify:

79) $2x + 3y + 2x + 3x^2$ 80) $2x^2 + 3x^2y - 4x^2 + 3xy^2$81) $4ab + 3a^2b - 4ab + 6a^2b$

82) $5a^2b + 6a^2b - 3a + 3a$ 83) $3x^2 + 4xy - 5x^2 + 6xy$ 84) $3cd + 2c^4d - 12cd$

Order the numbers from least to greatest.

85) 3, -2.2, $\frac{7}{2}$, - $\sqrt{30}$, -9   86) 4.5, $\sqrt{24}$, 5, - $\frac{3}{2}$, -2   87) $\sqrt{5}$, $\frac{5}{3}$, -2, 5, 1

88) Write and solve a three step equation with an answer of 6.

89) Write and solve a three step equation with an answer of -10.

90) Write and solve a three step equation with an answer of $\frac{3}{2}$.

91) Name two points that would have a slope of $\frac{7}{3}$.

92) Name two points that would have a slope of $\frac{-5}{7}$.

93) Name three points that represent a constant slope of $\frac{1}{3}$.

94) Name three points that represent a constant slope of -5.

95) Name two points that would give a slope of zero.

96) Name two points that would give an undefined slope.

97) Name a point that would create a slope of $\frac{-7}{5}$ with the point (3, -4)

98) Graph the point A (2, 0), B(-5, 2), C(0, -3), D(4, -3), E(1, 3)

99) Graph the line y = 2x -3 and include a table of points used

100) Graph the line 3x – 2y = 6 and include a table of points used.