Honors Algebra 1 Summer Packet

Name__________________________________________

Pledge_______________________________________________________________

Most of the problems in this packet represent the types of problems found in the first few chapters of your Algebra I textbook. Your Honors Algebra I course will begin with Chapter 3 in your textbook. It will be expected that you know how to work all the material found in this packet.

Instructions:

• Please show work where indicated. DO NOT use scratch paper.

• Copy all problems except # 91 – 98.

• Please work all problems on loose leaf paper with a # 2 pencil. Do not use ink.

• DO NOT use a calculator.

• Write neatly.

• Follow all directions to each set of problems. There should be no decimal answers unless the problem has decimals in it.

• This work is independent work. However, you may enlist the help of a tutor on concepts, but not specific problems in this packet. Having someone help you with the specific problems in this packet will be considered an Honor Council violation.

• You will submit this packet to your algebra teacher on the first day of class.

• You will have a test on this material after the first week of school.
Simplify each expression. Copy the problem and show all steps. Remember: NO CALCULATOR

1] $7 + 6 + [- (2 - 3)]$
2] $15 \left( \frac{1}{5} \right)$
3] $24 \left( \frac{1}{3} + \frac{1}{8} \right)$

4] $3 + 8x + 11$
5] $18t - (-6)t$
6] $5e + 8f + (-2)e - 12f$

7] $- 6(a + b) + 9(a - b)$
8] $- 4.29 ÷ -0.3$
9] $25 ÷ 5 \cdot 5 - 6 + 2$

10] $\frac{-5a}{7} (-7)$
11] $- 8(3m - n)$
12] $3(m + n) - 5(2m - n)$

13] $\frac{9 \cdot 3 - 4^2}{3^2 + 2^2}$
14] $25 - \frac{1}{3} (18 + 9)$
15] $| -5 |$

16] $| -8 + 2 |$
17] $- | -2 + 1 |$
18] $| -9 - 8 | - | -6 |$

Evaluate each expression if $a = -2$, $b = 3$, $c = 6$, and $d = \frac{1}{3}$. Copy the problem and show your substitution.

19] $\frac{a - b}{d}$
20] $- a(b + c)$
21] $d(a + b)$

22] $\frac{a - b + 3d}{d}$
23] $b - a^2$
24] $(b - a)^2$

25] $ab^2$
26] $-(b - c)^2$
27] $cd - b - a$

Write an algebraic expression for each verbal expression. Use $x$ as the variable.

28] a number increased by seventeen
29] the product of five and a number
30] twice the cube of a number
31] one-half the square of a number
32] the quotient of a number and two
33] three-fourths of a number decreased by one
34] the difference of a number and two
35] the sum of a number and twelve
36] five less than a number
37] twice the difference of a number and two

Simplify each expression. Copy the problems.

38] $a^2 \cdot a^3$
39] $(-5a^2)(-7a)$
40] $(x^3)^2$

41] $\frac{y^5}{y^8}$
42] $\frac{4xy^2}{12x^2y}$
43] $\frac{5x \cdot 3y}{y^2 \cdot 10x}$

44] $\left( \frac{2}{3} \right)^2$
45] $(5y^2 + 3y - 4) + 8(2y^2 + 5)$
46] $- 4x^2(3x^3 - 7x + 1)$

47] $(2x - 3)(x + 1)$
48] $(4x - 5)(3x - 2)$
49] $(5x - 2)^2$

50] $(2x + 3)^2$
51] $x(4x - 5)(3x^2)$
52] $(3x^3)^2$
Find each sum or difference in simplest form. Copy the problems. Remember: NO CALCULATOR.

53] \[ 12 \frac{3}{8} - 7 \frac{1}{2} \] 54] \[ -2 \frac{5}{8} + 7 \frac{1}{4} \] 55] \[ -8 + 5 \frac{3}{4} \]

56] 2.36 + 1.9 57] 12 - 1.3 58] -18.5 - 1.62

Find each product or quotient in simplest form. Copy the problems. Remember: NO CALCULATOR.

59] \[ \frac{7}{8} \cdot 2 \frac{1}{5} \] 60] \[ -2 \cdot \frac{5}{3} \] 61] \[ \frac{1}{4} \div (12) \div \frac{1}{3} \]

62] \[ \frac{8}{3} \div \frac{1}{9} \] 63] \[ -1 \frac{1}{3} \div -1 \frac{5}{7} \] 64] \[ 5 \div \frac{1}{4} \div \frac{1}{2} \]

DO NOT use a calculator to answer the following problems about percents. Copy the problems and show what method you used.

Express each fraction as a percent.

65] \[ \frac{7}{20} \] 66] \[ 5 \frac{1}{4} \] 67] \[ \frac{1}{8} \]

Express each percent: a. as a fraction in lowest terms b. as a decimal.

68] 65% 69] \[ 8 \frac{1}{2} \% \] 70] 125%

Copy all problems and show your work.

71] Find 18% of 200. 72] 14 is 20% of what number? 73] 30 is what percent of 120?

Solve each equation. Show every step.

74] \[ 6x + 5 = 8x - 4 \] 75] \[ \frac{3y - 5}{2} = -6 \] 76] \[ \frac{1}{3}x = 5 \]

77] \[ \frac{1}{2}(7y + 6) = -4 \] 78] \[ 3(x - 6) + 2x = 37 \] 79] \[ 2x - 3(x + 1) = -(5x + 3) + x \]

80] \[ \frac{1}{4}x + \frac{7}{2} = -\frac{5}{8}x \] 81] \[ \frac{2}{3}x - 8 = 16 \] 82] \[ \frac{x}{4} = \frac{3}{2} \]

83] \[ \frac{6x - 1}{12} = \frac{x}{30} \] 84] \[ 0.3x - 5.6 = 0.02x \] 85] \[ \frac{1}{3}(12 - 6x) = 4 - 2x \]
Solve and graph each inequality on a number line.

86] $5g - 8 \leq 17$  
87] $y - 14 \leq 3y + 8$  
88] $-3d + 6 < d - 4$

Order the numbers from least to greatest.

89] $\frac{1}{2}, 0.2, 0.25$  
90] $\frac{39}{40}, \frac{19}{20}, \frac{1}{2}$

For each problem:

a) Define your variable. EX: $x = \text{number of girls}$ or $h = \text{total hours}$
b) Write and equation that models the problem.
c) Solve the equation and label the answer.
Show all computation on your paper. DO NOT use scratch paper.

Example: There were three more girls than boys in the class. There were a total of 21 students. How many boys were in the class?

$x = \text{number of boys}$  
$x + 3 = \text{number of girls}$  
$x + x + 3 = 21$  
$2x + 3 = 21$  
$2x = 21 - 3$  
$2x = 18$  
$x = 9$  
$x + 3 = 12$  
There are 12 girls in the class

91] Jay has saved three times as much money as Sue. Together they have saved $252. How much does each have?

92] The sum of 75 and twice a number is 219. Find the number.

93] Find a number whose product with 7 is the same as its sum with 24.

94] The sum of three consecutive integers is 126. Find the integers.

95] The sum of three consecutive even integers is $-30$. Find the smallest integer.

96] The perimeter of a rectangle is 264 in. and the length is 72 in. Find the width. (hint: the equation is the formula for perimeter)

97] Adult tickets for a concert were $5 each and student tickets were $2 each. A total of 980 tickets, worth $3460, were sold. How many adult tickets were sold? (hint: if $x = \text{number of adult tickets}$, then $980 - x = \text{number of student tickets}$)

98] Sara earns $6.00 more an hour than her assistant. During an 8 hour day they earn $240 together. How much does each earn per hour?
Please staple this page to the top of your work pages and hand in to your Honors Algebra I teacher on the first day.

Honors Algebra I Period ________  Name__________________________________________

Instructions: Answer the following questions by checking each box.

☐ I completed all work on loose leaf paper with a # 2 pencil.

☐ I showed work where indicated.

☐ I did not use scratch paper.

☐ I copied all the problems except # 91 – 98.

☐ I did NOT use a calculator.

☐ My handwriting is neat and legible.

☐ I followed all directions for each set of problems.

☐ I did not use decimal answers unless the problem had decimals in it.

☐ I completed the problems without help.

☐ I received help with particular concepts from ____________________________

_________________________________________ ________________________________

Pledge: _________________________________________________________________
_________________________________________________________________