FCHS SUMMER PACKET-2009-2010

(For students entering algebra 1)

Congratulations on your promotion and welcome to algebra 1!

A supply list is being provided to you so you can purchase items during the summer at perhaps a discounted price. Please purchase a spiral notebook with a heavy cardboard or plastic cover containing 180-250 pages and pockets. This notebook will be your homework spiral and should be used to complete the packet. Other supplies should include a ruler, pencils, erasers, checking pencils or pens, white board markers, graph paper, TI-83,TI-83 plus, or TI-84 graphing calculator. These calculators are often on sale during the summer. If you cannot provide your own TI calculator, one may be rented for the school year 2009-2010. If you misplace or lose it during the school year, you must pay the replacement cost of $100.00 by May 1, 2010 or earlier.

The following problems review topics from math 8/pre algebra and algebra 1 pt. 1 and provide a review of necessary skills for your success in Algebra 1. **Please complete the packet in your spiral notebook, showing all work.** You should complete the problems by the first day of school. This is your first homework assignment and will be **worth 50 points**. Upon returning to school, **you will also be tested** on your comprehension of this packet. This packet is designed to maintain your current knowledge of mathematics, so that the topics discussed in the fall will be fresh in your mind. Please do not wait until the last day of vacation to get started!!! If you need more review or help over the summer, there are many resources to be found at the library and on the Internet. You may try Ask Dr. Math at www.mathforum.org/dr.math/

If you lose your packet you may pick up a replacement copy in the Guidance Office over the summer while supplies last. Guidance has a limited number of packets so students are urged to keep their summer packets in a safe place. *You may also visit the Falls Church High School website for another copy of this packet.* It is your responsibility to complete the packet.

Have an enjoyable summer!!! Remember to work on the packet gradually during your vacation. You should be proud of your accomplishments and talents in mathematics. The algebra 1 team is looking forward to working with you this fall.

Sincerely,

Falls Church High School
Math department
Algebra 1 Team

Directions: Write each problem in your spiral notebook. Show your work to answer the problem correctly. **NO CALCULATORS!!!**

I. Determine the LCD and simplify to lowest terms. No calculators Please!

1. $\frac{1}{2}+\frac{1}{8}$ 2. $\frac{3}{5}-\frac{1}{10}$ 3. $\frac{7}{10}+\frac{1}{3}$ 4. $\frac{15}{24}-\frac{7}{12}$

5. $5\frac{1}{8}-2\frac{3}{4}$ 6. $1\frac{3}{7}+\frac{1}{2}$ 7. $4\frac{3}{8}-2\frac{5}{6}$ 8. $\frac{3}{7}+\frac{3}{4}$

9. .23+4 10. .067- .45 11. 2.56 +1.3 12. .012 - .6723

13. $4\times .5$ 14. $1.2\times -.5$ 15. $-3.21\times -.1$ 16. $.004\times .02$

II. Determine the reciprocal of each number.

17. $6\frac{2}{5}$ 18. $10\frac{1}{3}$ 19. $\frac{2}{7}$ 20. $4\frac{3}{4}$

III. Multiply or divide. Write the answer in lowest terms.

21. $3\frac{2}{5}\div 4$ 22. $7\frac{1}{5}\div 2\frac{1}{4}$ 23. $\frac{-5}{8}\times\frac{4}{-15}$ 24. $\frac{3}{4}\times\frac{8}{9}$

25. $-5\frac{1}{4}\times\frac{1}{-17}$ 26. $\frac{7}{8}\div\frac{3}{4}$ 27. $\frac{5}{12}\div\frac{1}{-2}$ 28. $-2\frac{1}{4}\div 1\frac{1}{3}$

IV. Simplify in lowest terms.

29. $-4\frac{1}{4}\times\frac{2}{3}$ 30. $6\frac{5}{7}-2\frac{1}{5}$

31. $\frac{9}{10}+\frac{3}{8}$ 32. $\frac{-4}{7}\div\frac{4}{5}$

V. Simplify each expression

33. $-12+(-16)$ 34. $\frac{-3}{2}+(-12)$

35. $|-18+7|$ 36. $182-(-240)$

37. $|9-12|$ 38. $|-4-8|$

VI. Evaluate each expression:

39. $-x-y$ for $x = -2$ and $y = \frac{1}{2}$

40. $-r-s$ for $r = -\frac{1}{7}$, $s = -19$

41. $|a-b|$ for $a = -7$ and $b = 14$

42. $|13-a+b|$ for $a = 7$ and $b = -15$

43. $-u+v$ for $u = -2$ and $v = -\frac{4}{7}$

44 $(2x+y)(20-xy)$ *if* $x=-1$ *and* $y=2$

VII. Translate the expression into a mathematical expression or equation. Solve any equation.

45. Half of 5 46. Three fifth of 15 47. One third of 9

48. A number cubed

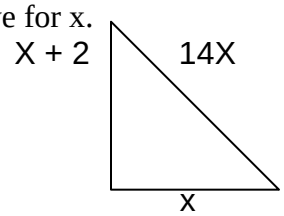
49. Six less than four times a number

50. The quotient of a number and 10 is five.

51. Half of a number is greater than 2

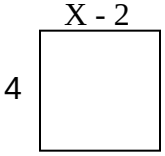
52. Seven less than a number is 15.

53. Solve for x.



Perimeter is 30

54. Solve for x.



Area = 50

55. Nine bus passengers paid a total fare of $7.20. What was the fare for one passenger?

56. Courtney has read all but 25 pages of a 314 page book. How many pages has she read?

57. Savannah's father is 45 years old. How old is she if Savannah is one-third of her father's age.

58. If Sue sells cookies for 25 cents each, how many cookies will she need to sell if she would like to make more than $10?
59. If Sebastian is pedaling his bike at a rate 4 miles an hour for 3 hours, how far did he travel?

60. If Alex earns $4.50 an hour running errands for Mrs. Smith, write an equation that represents the amount of money he would earn if he worked 10 hours that week.
61. A number squared is less than or equal to 200.
62. Twenty less than triple a number is 30.
63. Fredrick will earn no more than $400 in one month.

VIII. Find the GCF

64. 21 and 24 65. $12a^3b$ And 15ab 66. 45 and 54

IX. Find the LCM.

67. 9 and 15 68. 7x and 8x 69. 25x and 10x

X. Solve each problem using a proportion or an equation.

70. What is 12.5% of 96?

71. 60 is 75% of what number?

72. The integer 6 is what percent of 5?

73. The regular price of a television is $500. What's the sale price if it's 15% off on sale?

74. The temperature was 72°F and then it dropped 2° per hour for the next eight hours. What is the final temperature?

75. Find the number for y that would make the ratios equivalent. $\frac{1}{y} = \frac{10}{100}$

76. In a class of 26 students, 15 of them are boys, what is the ratio of girls to boys?

XI. Questions 117 through 120, write and solve an equation for each problem.

77. A group of runners participated in a 10-kilometer race. One-eighth of the runners completed the race in 40 minutes or less. Seven-twelfths of the runners needed between 40 minutes and one hour to finish. The remaining 70 runners took one hour or longer to complete the race. How many runners participated in the race?

78. A boat traveled at an average speed of 14.4 km/h for 3.5 hours. How far did the boat travel? Use d = rt.

XII. Solve each inequality and graph the solution on the number line.

79. $x - 6 < -8$ 80. $12 \geq 6x$ 81. $-3x > 6$ 82. $\frac{-2}{3}x \leq 8$

XIII. Graph each equation using a table of values. Use graph paper for graphs.

83. $y = x - 3$ 84. $y = -3x + 4$ 85. $y = 12x + 2$

XIV. Write and solve an equation for each problem.

86. Three times the sum of a number and eight is four more than twice the sum of the number and six.

87. Three mathematics students were in the finals of the state competition. Kim scored the least number of points. Claire scored five more points than Kim. Sam scored twice as many points as Kim. Together the three students scored 85 points. How many points did each student score?

88. The length of one side of a triangular lot is 6 m less than three times the length of the second side. The third side is 8 m longer than the first side. The perimeter of the lot is 80 m. find the length of all three sides.

89. The students on the Plaid Team sold cookies to raise money. Peanut butter cookies sold best. The students sold half as many chocolate chip cookies as peanut butter cookies. Twenty dozen cookies were sold all together. How many cookies of each type were sold?

XV. Simplify each expression (show steps) Remember "Please Excuse My Dear Aunt Sally"

90. $.3 + 2 \times 7$

91. $4(7-5)^3 + 11 - 13 \times 2$

92. $\frac{20 + 10}{5}$

93. $\frac{[47 - (5 - 2)(1 + 2^3)}{3 \times 7 - 5^2}$

XV. Give on example of each property.

94. Write an example of commutative property of addition

95. Write an example of multiplicative zero property of real numbers

96. Write an example of additive identity property.

97. Write an example of associative property of multiplication of real numbers.

98. Write an example of distributive property of addition.

99. Write an example of additive inverse property of numbers.

100. Write an example of zero product property of multiplication.