

Honors Algebra I
Summer Assignment Packet

Houston High School

Name: _____

Middle School: _____

8th Grade Math Teacher: _____

Algebra I Honors description and Honors Pledge

This course is designed for students with an excellent, enriched, or accelerated 8th grade math background who want a more challenging approach to Algebra I. More emphasis will be placed on understanding and applying the different sets of real numbers; on developing the concept of functions; on establishing connections between graphs, equations, and numerical patterns; and on solving a greater variety of applications.

For this course, it is strongly recommended that students are skilled in working with the basic mathematical operations using fractions, decimals, and whole numbers ***WITHOUT*** the use of a calculator. **Calculator usage is very limited for Honors Algebra I.**

Completion of this packet is required for all students entering Algebra I Honors at Houston High School. All work must be done on these pages in the space provided. Answers may **NOT** be given in decimal form, unless the question has decimals in it, and all fractions **MUST** be in simplest form. You should **NOT** use a calculator to complete these problems.

The completed packet, including this page, must be turned in the first day of the class. Make sure to read the honors pledge and sign before starting the packet. This will be graded as your first homework grade. You will be tested over the material within the first week of the class, without the use of a calculator, to determine proper placement.

YOU MUST SHOW ALL YOUR WORK FOR FULL CREDIT.

YOU MUST BOX IN YOUR FINAL ANSWER.

Honors Pledge: This work is solely the result of my own effort. I have neither given nor received any unacknowledged assistance. I have also neither seen nor am aware of any honor violations in this assignment. I did NOT use a calculator to complete this packet.

Name: _____

Signature: _____

Date: _____

Name: _____

Period: _____

Algebra I Honors Summer Assignment**MUST show ALL work for a full credit. Must box your final answer.****INTERGERS: Find each sum or differences of the following expressions.**

1. $-8 + 16$

2. $12 + (-18)$

3. $-14 - 8$

4. $-21 - (-34)$

5. $-45 - 17$

6. $-78 + 105$

Find each product or quotient.

7. $-12(18)$

8. $-108 + -6$

9. $7(-23)$

RATIONAL NUMBERS: Simplify the following expressions.

10. $\frac{2}{9} + \frac{4}{9}$

11. $\frac{11}{16} - \frac{5}{16}$

12. $\frac{2}{5} - \frac{3}{15}$

13. $-\frac{2}{7} - (-\frac{4}{14})$

14. $-\frac{7}{10} - \frac{2}{25}$

15. $-\frac{5}{6} + (-\frac{2}{3})$

16. $1.37 - 0.459$

17. $-25.79 - 19.42$

18. $83.92 - (-12.09)$

19. $\frac{3}{4} \cdot \frac{6}{7}$	20. $-\frac{9}{4} \cdot \frac{1}{18}$	21. $-\frac{1}{3} \cdot -9\frac{1}{4}$
22. $\frac{3}{7} \div -\frac{2}{5}$	23. $3\frac{1}{6} \div \frac{1}{3}$	24. $-\frac{10}{3} \div -1\frac{1}{5}$

WORD PROBLEMS: Define a variable, write an equation, and solve.

25. The outside weather was -3°F in the morning and 14°F in the afternoon. By how much did the temperature increase by the afternoon?

26. A dolphin swimming 26 feet below the ocean's surface dives 17 feet straight down. How many feet below the ocean's surface is the dolphin now?

27. Steven earns \$11 per hour. He works 14 hours a week. His employer withholds \$42 from each paycheck for taxes. If he is paid weekly, what is the amount of his paycheck?

28. Helen is working on a monthly budget. Her monthly income is \$600. She has allocated \$220 for savings, \$110 for vehicle expenses, and \$85 for clothing. How much is available to spend on food and entertainment?

29. Eight times a number decreased by the number is -49. Find the number.

30. Twelve more than 4 times a number is the same as 4 less than twice the number. Find the number.

31. Eight times the sum of a number and -6 is 32. Find the number.

32. The perimeter of a garden is 30 feet. The length of the garden is twice as long as it is wide. What is the length of the garden?

33. The total cost for tuition plus room and board at State University is \$15,296. Tuition costs \$1812 more than room and board. What is the tuition fee?

Evaluate and simplify the following expressions.

34. $27 - 4(9 - 5)$

35. $4[4 - 7 + 3^2(9 - 5)]$

36. $\frac{3^2 \cdot 7 - 3 \cdot 7^2}{3 \cdot 7}$

37. $4x + 8(2x - 4)$

38. $5a + 2a^2 + 3a - a^2$

39. $7x - 3(9x - 5)$

Evaluate each expression if $a = 5$, $b = 3$, and $c = 4$.

40. $c + 4a$

41. $5b^2 \div c$

42. $(a^2 + 2bc) \div 7$

Solve each equation or inequality.

43. $18 + x = 50$

44. $-15 - b = -52$

45. $\frac{x}{9} = -7$

46. $6x = 78$

47. $9x + 27 = -72$

48. $\frac{n}{-7} - 8 = -2$

49. $45 = 7 - 5n$	50. $9 + \frac{2}{3}x = 81$	51. $\frac{4n-2}{7} = 2$
52. $9x - 4 = 2x + 3$	53. $6(x + 5) = 66$	54. $\frac{b-4}{6} = \frac{b}{2}$
55. $3(3m - 2) = 2(3m + 3)$	56. $6(3x + 1) - 30 = 2x - 4$	57. $\frac{2m}{3} = \frac{1}{3}(2m - 12)$
If $f(x) = 4x + 9$ and $g(x) = x^2 - 7$, find each value.		
58. $f(-5)$	59. $g(6)$	60. $f\left(\frac{1}{4}\right)$
Solve each proportion		
61. $\frac{x}{20} = \frac{4}{5}$	62. $\frac{x-6}{9} = \frac{2}{3}$	63. $\frac{x-1}{x+1} = \frac{4}{5}$

Rewrite the following expression to solve for x.

64. $2x + 6y = -1$

65. $\frac{x}{4} + 5y = 2$

66. $3x - 9y = 2$

Find the slope of the line that passes through each pair of points.

67. $(4, 5)$ and $(-2, 8)$

68. $(-2, 0)$ and $(-2, 4)$

69. $(-3, 8)$ and $(6, -7)$

Find the x-intercept and y-intercept. Then graph each equation.

70. $3x - 4y = 12$

71. $12x + 6y = 24$

72. $y = -2$

