

Incoming Honors Freshman Students and Parents,

Mr. Ball and Mr. Bogdan would like to be one of the first to welcome you to Argo Community High School. Honors Geometry is an accelerated course and based on the limited time and the speed of the course, it is essential that incoming students are competent and comfortable in certain Algebraic areas. Therefore, we have compiled a set of questions designed to aide students in their understanding and prepare them for what it expected when school begins in August.

Grade 10%

Completion of packet = 5% of your semester grade

Test over the packet = 5% of your semester grade

Due Date

The first full day of class in the fall

Test over packet material

Approximately one week following the due date

Questions

Please email one of the teachers below and we will get back to you as soon as we can. We are looking forward to meeting in the fall!

Contact information

Mr. Scott Ball
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Mr. Lucian Bogdan
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We are looking forward to seeing you this fall,



Mr. Scott Ball



Mr. Lucian Bogdan

Name _____ Middle School Attended _____

Honors Algebra 1 / Honors Geometry Summer Packet

Variables, Function Patterns, and Graphs

<u>Using Variables</u>	
Write an algebraic expression for each phrase.	
1. The sum of 9 and k minus 17	
2. 23 less than x	
3. 15 plus the quotient of 60 and w	
4. 9.85 less than the product of 37 and t	
Write an algebraic expression for each phrase.	
5. Fourteen is equal to the sum of a number and eight.	
6. The difference of a number and two is nine.	
7. Six more than the quotient of a number and five is ten.	
Find the average speed for the given distance and time. Include units of measure in your answer.	
8. A car travels 220 miles in 5 hours. <i>hint: $r = \frac{d}{t}$</i>	

<u>Exponents and Order of Operations</u>	
Simplify the expression.	
9. $(2 + 3)^2 - 10$	10. $27[5^2 \div (4^2 + 3^2) + 2]$
Evaluate the expressions for $m = 2$, $p = 7$, and $q = 4$.	
11. $\frac{16m+8}{10+m^2-q}$	12. $m(p^3 - q)$

Exploring Real Numbers

Find the absolute value.

13. $|4|$

14. $\left| -\frac{9}{14} \right|$

Use $<$, $=$, or $>$ to compare.

15. $|-18|$ _____ $|-17|$

16. $\left| \frac{1}{2} \right|$ _____ $|-0.51|$

Simplify the expression. Absolute value symbols serve as grouping symbols.

17. $6|41 - 38|^2 + 8$

Patterns and Functions

Write a function for each rule.

18. Function: _____

x	y
1	4
2	8
3	12
4	16

19. Function: _____

x	y
1	10
2	16
3	22
4	28

Scatter Plots

Would you expect a positive correlation, negative correlation, or no correlation from the data graphed?

20.



21.



22.



Rational Numbers (NO CALCULATOR)**Adding Rational Numbers****Find the sum.**

23. $-7 + (-14) + 1$

24. $\frac{3}{4} + \left(-\frac{1}{2}\right) + \left(-\frac{5}{8}\right)$

Evaluate the expression for the given value of x.

25. $7 + x + (-3) + (-5)$ when $x = 5$

Subtracting Rational Numbers**Find the difference.**

26. $-3 - 8 + 12$

27. $-4 - (-9) - \frac{1}{3}$

Evaluate the expressions for $x = 3$, $y = -4$, and $z = 6$.

28. $2x - z$

29. $-z + y - x$

Multiplying and Dividing Rational Numbers**Simplify the variable expressions.**

30. $|(-7)(-m)^3(-m)^2|$

31. a. $(-21)(-x)(x)(-x)$		b. $-(-3)^3(-t)^2$	
32. a. $\frac{5}{\left(\frac{4}{9}\right)}$	b. $\frac{3}{8} \div \left(-\frac{2}{3}\right)$		c. $\frac{-\frac{5}{6}}{8}$
Evaluate the expression.			
33. $-x^3 + 2x$ when $x = 5$		34. $-4(t^2 - 25)$ when $t = -3$	
The Distributive Property			
Simplify using the distributive property.			
35. $12(3 + n^2)$	36. $(-2 - 3y)(-7y^2)$		37. $4x^3(5x^2 - 9)$
Simplify then combine like terms.			
38. $2(3a - 5) - 4a$		39. $-2t(t - 5t^2) + (-5t^3)$	

Simplify the expressions.

40. $\frac{6}{7}n + n^3 - \left(-\frac{5}{6}n\right)$

41. $8m^2 - 5mn + 4mn - m^2 + 4$

42. $-(m + 3) - 2(m + 3)$

Solving Equations

Solving One and Two-Step Equations

Solve each equation. CHECK your answer.

43. $x - 15 = 6$

44. $-12 = 12 + x$

45. $-\frac{3}{4} = x + \frac{1}{2}$

46. $x - (-9) = -2.5$

47. $15 - (-x) = 23$

48. $\frac{5x}{2} = \frac{30}{7}$

Solve each equation. CHECK your answer.

49. $2n - 5 = 7$

50. $-3 + \frac{m}{3} = 12$

51. $-x - 4 = -20$

52. $\frac{5}{7}x + \frac{1}{7} = 3$	53. $-10t - 4 = -30$	54. $\frac{a}{4} - 21 = 7$
55. $-\frac{1}{5}t - 2 = 4$	56. $\frac{-y}{2} + 14 = -1$	57. $0.4x + 9.2 = 10$
Solve each equation. (Hint: As your first step, multiply each side by the denominator of the fraction.)		
58. $\frac{x+2}{9} = 5$	59. $\frac{x-3}{7} = 12$	60. $\frac{x+6}{4} = -7$

<u>Solving Multi-Step Equations</u>		
Solve each equation.		
61. $2(8 + p) = 22$	62. $m + 5(m - 1) = 7$	63. $7m - 3m - 6 = 6$

64. $\frac{a}{7} - \frac{5}{7} = \frac{6}{7}$

65. $\frac{2}{3} + \frac{3k}{4} = \frac{71}{12}$

66. $15 = -3(2q - 1)$

67. $7.8y + 2 = 165.8$

68. $0.25m + 0.1m = 9.8$

69. $\frac{1}{4}(m - 16) = 7$

70. $2 + \frac{a}{-4} = \frac{3}{5}$

71. $26.54 - p = 0.5(50 - p)$

72. $8y - (2y - 3) = 9$

73. $-(z + 5) = -14$

Equations with Variables on Both Sides

Solve each equation. If you get the answer $0 = 0$, then write *all real numbers*. If you get an answer such as $0 = 1$ or $4 = 8$ then write *no solutions*.

74. $-8x - 70 = 6x$

75. $-3 - (-4x) = -4x + 5$

76. $3(2x - 9) = 6x - 27$

77. $x + 4 = x - 8$

78. $-(10 - x) = 3(x + 4)$

79. $\frac{4}{5}x - 7 = \frac{4}{5}x + 14$

80. $-2(1 + 4x) = -2 - 4x$

81. $a - 4a = 2a + 1 - 5a$

82. $6b + 14 = -7 - b$

83. $-2(x - 1) - 5 = -(2x + 3)$

84. $7 + \frac{2}{3}y = \frac{1}{6}y - 5$

85. $\frac{3}{4}\left(\frac{8}{3}x - 8\right) - 3 = \frac{1}{2}(4x + 6)$

Ratios and Proportions

Solve.

86. $\frac{5}{6} = \frac{c}{9}$

87. $\frac{8}{d} = -\frac{12}{30}$

88. $\frac{x+3}{4} = \frac{7}{8}$

89. $\frac{8}{b+10} = \frac{4}{2b-7}$

90. $\frac{m+12}{9m} = \frac{5}{9}$

91. $\frac{p}{20} = \frac{p-4}{5}$

Equations and Problem Solving

Write and solve an equation for the scenarios described below.

92. You ate three of the eight pizza slices and you paid \$3.30 as your share of the cost. How much did the whole pizza cost?

93. The length of a rectangle is 6 inches more than its width. The perimeter of the rectangle is 24 inches. What is the length of the rectangle?