

# Lake Zurich High School

## Mathematics Department

### GETTING STARTED PACKET *for* Honors Algebra I

**PURPOSE:** The purpose of this packet is to get you thinking about mathematics. It is a self-evaluation tool to provide you with information about what you know and what you still need to work on. The content is primarily computation in nature. However, the skills are ones that will be utilized daily and are the foundations of Algebra I. If you find yourself struggling with many of the questions, you need to do something about it. For example,

- Go to the library and review your old textbook.
- Go online and search for homework help.
- Form a study group with friends. Maybe together you can figure it out.
- Ask parents, siblings, neighbors for help.

#### **DIRECTIONS:**

- 1) Do not use a calculator. We want to assess your arithmetic skills.
- 2) Show all work.
- 3) Check your answer with the attached answer key.
- 4) Check the box at the right for each question using the code below.
  - A. got it right the first time
  - B. got it wrong, but able to figure out mistake on my own
  - C. got it wrong, only able to figure out mistake with help
  - D. don't understand at all after trying several times

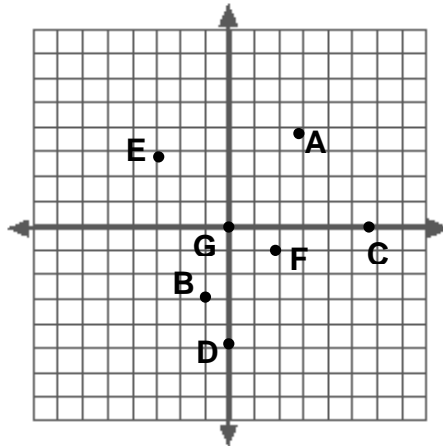
These packets will be collected during the first week of school. Your grade will not be affected by any of the checks that you placed in the boxes to the right. The boxes are used for evaluation of your needs only.

		Right first time	Wrong, found mistake	Wrong, needed help	Don't understand
<b>Topic:</b>	Fractions, decimals, percents, perfect square numbers, prime numbers and factoring. DO NOT USE A CALCULATOR				
1.	Write $\frac{1}{4}$ as a decimal.				
2.	Write 0.125 as a fraction in lowest terms.				
3.	Write $\frac{15}{4}$ as a mixed number.				
4.	Write $4\frac{1}{2}$ as an improper fraction.				
5.	Write 1.6 as a fraction in lowest terms.				
6.	Write $\frac{3}{8}$ as a decimal.				
7.	Reduce completely: $\frac{32}{48}$				
8.	$\frac{7}{8} - \frac{1}{2}$				
9.	$\frac{2}{3} + \frac{3}{7}$				
10.	$6 - \frac{5}{2}$				
11.	$\frac{1}{3} \cdot 6$				
12.	$\frac{4}{7} \cdot \frac{8}{9}$				
13.	$5 + \frac{1}{8}$				
14.	$1\frac{1}{4} + 3\frac{1}{4} + 2\frac{3}{4}$				
15.	15 is what percent of 20?				
16.	A student answered 140 questions correctly out of 200. What percent is this?				
17.	Find 60% of 50.				
18.	Find 0.5% of 1000.				
19.	Which of the following is a <u>perfect square</u> (the square of a whole number)  (a) 8      (b) 4      (c) 20      (d) 3				

		Right first time	Wrong, found mistake	Wrong, needed help	Don't understand
20.	Which of the following is a <u>prime number</u> ? (a) 7      (b) 21      (c) 15      (d) 35				
21.	Which are NOT factors of 12? (a) 10      (b) 6      (c) 4      (d) 5      (e) 3				
22.	List all the prime numbers less than 30.				
23.	List all the factors of 24.				
24.	What is the average of 11, 13, 18 and 22?				
<b>Topic:</b>	Signed Numbers.      DO NOT USE A CALCULATOR				
25.	$3 - 6 + 4 - 12$				
26.	$-4 + (-7)$				
27.	$5 - (-4)$				
28.	$-2 - 9$				
29.	$(-8) - (-1)$				
30.	$\frac{-15}{-1}$				
31.	$(-2)(-3)(5)$				
32.	$\frac{-28}{4}$				
33.	$(-3)^4$				
34.	$5\frac{1}{2} - 6\frac{1}{4}$				
35.	$2\frac{1}{3} + (-4)$				

		Right first time	Wrong, found mistake	Wrong, needed help	Don't understand
<b>Topic:</b>	Order of Operations. DO NOT USE A CALCULATOR				
36.	$2 + 3(4)$				
37.	$(5 - 8)(4 - 2)$				
38.	$5(6 + 7)$				
39.	$17 - 4 + 9$				
40.	$36 + 4(9)$				
41.	$3 - 5^2$				
42.	$4(3^2 - 10)$				
43.	$3(2)^3$				
44.	$5 - 4 + 2$				
45.	$\frac{5 + (3(2 + 4))}{5 - 2(4 - 2)}$				
<b>Topic:</b>	Formulas. DO NOT USE A CALCULATOR				
46.	Find the perimeter of a rectangle with a length of 10 feet and width of 6 feet.				
47.	Find the area of the rectangle in problem #46.				
48.	Find the perimeter and area of a square with a side of 7 feet.				
49.	If $D = R \bullet T$ , find D when $R = 45$ and $T = 2\frac{1}{3}$				
<b>Topic:</b>	Evaluating Expressions. DO NOT USE A CALCULATOR				
50.	Evaluate $3x^2$ when $x = 4$				
51.	Evaluate $3x^2 + 2x - 5$ when $x = -2$				
52.	Evaluate $-a + 3b$ when $a = -8$ and $b = 2$				
53.	Evaluate $x^2 + y^2$ when $x = 3$ and $y = 4$				

		Right first time	Wrong, found mistake	Wrong, needed help	Don't understand
<b>Topic:</b> Solving Equations. DO NOT USE A CALCULATOR					
54.	$x + 6 = 9$				
55.	$5x = 2$				
56.	$\frac{2}{3}x = 12$				
57.	$X - 8 = 12$				
58.	$8 = -4 + 2x$				
59.	$3x - 7 = 10$				
<b>Topic:</b> Plotting Points. DO NOT USE A CALCULATOR					
60.	A ( , )				
61.	B ( , )				
62.	C ( , )				
63.	D ( , )				
64.	E ( , )				
65.	F ( , )				
66.	G ( , )				



Answers to Summer Packet

1. 0.25	23. 1, 2, 3, 4, 6, 8, 12, 24	45. 23
2. $\frac{1}{8}$	24. 16	46. 32 feet
3. $3\frac{3}{4}$	25. -11	47. 60 square feet
4. $\frac{9}{2}$	26. -11	48. Perimeter: 28 feet Area: 49 square feet
5. $\frac{8}{5}$ or $1\frac{3}{5}$	27. 9	49. 105
6. 0.375	28. -11	50. 48
7. $\frac{2}{3}$	29. -7	51. 3
8. $\frac{3}{8}$	30. 15	52. 14
9. $\frac{23}{21}$ or $1\frac{2}{21}$	31. 30	53. 25
10. $\frac{7}{2}$ or $3\frac{1}{2}$	32. -7	54. $x = 3$
11. 2	33. 81	55. $x = \frac{2}{5}$ or 0.4
12. $\frac{32}{63}$	34. $\frac{-3}{4}$	56. $x = 18$
13. $\frac{41}{8}$	35. $\frac{-5}{3}$ or $-1\frac{2}{3}$	57. $x = 20$
14. $\frac{29}{4}$ or $7\frac{1}{4}$	36. 14	58. $x = 6$
15. 75%	37. -6	59. $x = \frac{17}{3}$ or $5\frac{2}{3}$
16. 70%	38. 65	60. A (3, 4)
17. 30	39. 22	61. B (-1, -3)
18. 5	40. 72	62. C (6, 0)
19. 4	41. -22	63. D (0, -5)
20. 7	42. -4	64. E (-3, 3)
21. 10, 5	43. 24	65. F (2, -1)
22. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29	44. 3	66. G (0, 0)