Incoming Algebra I Students
Summer Packet

Are you ready for Algebra I?

Join our summer google classroom page!

Class Code: dvvcmlv

An answer key is posted for you to check your work.

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Summer work will be collected during the first week of school.

Week 1

This week, complete the following IXL skills. You should aim for a SmartScore between 80 and 90!

- W.8 Solve two-step equations
- W.9 Solve multi-step equations
- W.11 Solve equations with variables on both sides

Week 2

This week complete problems 1-12 in your "Are you ready for Algebra 1" summer packet

Identifying Properties

Name _____ Date _____ Period _____

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Summer Packet: Week 2

Properties	**Addition**	**Multiplication**
Commutative	$a + b = b + a$	$ab = ba$
Associative	$(a + b) + c = a + (b + c)$	$(ab)c = a(bc)$
Identity	$a + 0 = 0 + a = a$ 0 is the Additive Identity	$a \cdot 1 = 1 \cdot a = a$ 1 is the identity
Inverse	$a + (-a) = 0$	$a \cdot \frac{1}{a} = 1$
Zero		$a \cdot 0 = 0 \cdot a = 0$
Distributive	$a(b + c) = ab + ac$ and $(b + c)(a) = ba + ca$	
Substitution	If $a = b$, then a may be substituted for b	

Directions: Identify the property illustrated

1. $(6 + 7) + 4 = 6 + (7 + 4)$	
2. $10 \cdot 0 = 0$	
3. If $12 + 2 = 14$, then $14 = 12 + 2$	
4. $1 \cdot 58 = 58$	
5. $-4(x + y) = -4x - 4y$	
6. $\frac{3}{4} \cdot \frac{4}{3} = 1$	
7. $(25 - 5)4 = 20(4)$	
8. $26 + 0 = 26$	
9. $(10 + x) + y = y + (10 + x)$	
10. $6 + (x + y) = (6 + x) + y$	
11. $(5 + a)4 = 5(4) + 4a$	
12. $(2x) + (-2x) = 0$	

Week 3

This week, complete the following IXL skills. You should aim for a SmartScore between 80 and 90!

- C.3 Add and subtract integers
- C.7 Multiply and divide integers
- C.5 Add and subtract integers: word problems

Week 4

This week complete problems 13-24 in your "Are you ready for Algebra 1" summer packet

Simplify Expressions and Solving Equations

Name _____ Date _____ Period _____

Are You Ready for Algebra 1?

Summer Packet: Week 4

Parentheses **E**xponents **M**ultiplication or **D**ivision (whichever comes first) **A**ddition or **S**ubtraction (whichever comes first)

Directions: Simplify each expression.

13. $4 - 16 \div 4 \times 6 \times 3$	**14.** $5 - 10\,(10) \div 5^2 + 2$	**15.** $\lvert 6^2 - 4^3 \rvert + 10(2)$	**16.** $\frac{(-2)^3 - 1}{1+1}$

Part XIII. Solving Equations (multi-step and with the variable on both sides)

Directions: Solve each equation.

17. $6x - 15 = 33$	**18.** $\frac{x}{4} - 15 = 10$	**19.** $\frac{x-12}{2} = -5$	**20.** $0.2x + 4 = 9.6$
21. $4 + 10x = 5x - 1$	**22.** $4(x + 1) - 2 = 3x$	**23.** $6x = 3x - 18$	**24.** $8x + 10 = 7x - 4$

Week 5

This week, complete the following IXL skills. You should aim for a SmartScore between 80 and 90!

- Y.1 Find the slope of a graph
- Y.4 Slope-intercept form: find the slope and y-intercept

Week 6

This week complete problems 25- 40 in your "Are you ready for Algebra 1" summer packet

Finding Slope and Finding x and y intercepts

Name _____ Date _____ Period _____

Are You Ready for Algebra 1?

Summer Packet : Week 6

Slope Formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Equations of lines:

Vertical Line: $x = \#$ Slope of a vertical line is undefined or no slope.

Horizontal Line: $y = \#$ Slope of a horizontal line is 0.

Slope-Intercept Form: $y = mx + b$ where m is the slope (rise over run) and b is the y-intercept $(0, b)$.

x-intercept: set y = 0 and solve

y-intercept: set x = 0 and solve

Directions: For each set of ordered pairs, find the slope.

25. (6, -10) and (2, 3)	**26.** (4, 8) and (-1, 7)	**27.** (-6, 12) and (-3, 5)	**28.** (5, 4) and (7, 8)
29. (0, ½) and (-2, $\frac{3}{2}$)	**30.** (4, 6) and (4, 9)	**31.** (5, 8) and (6, 8)	**32.** (-0.5, 1.2) and (-0.5, 2.4)

Directions: For each linear equation, find the x- and y- intercepts.

33. 3x + 4y = 12	**34.** -5x – 2y = 10	**35.** 4x – 5y = 10	**36.** -6x + 2y = 24
37. 2y = -4x + 8	**38.** y = 2x – ½	**39.** 4x = -3y + 24	**40.** y = 4x – 2

Week 7

This week, complete the following IXL skills. You should aim for a SmartScore between 80 and 90!

- H.10 Solve proportions
- H.7 Solve proportions: word problems

Week 8

This week complete problems 41- 59 in your "Are you ready for Algebra 1" summer packet

Graphing Linear Equations and Scientific Notation

Name _____ Date _____ Period _____

Are You Ready for Algebra 1?

Skills – Part 2 Page 4

Summer Packet: Week 8

Graphing Linear Equations:

Directions: For each linear equation, identify the slope and y-intercept. Then graph on the coordinate plane.

41. $y = \frac{1}{2}x - 1$ $m =$ $b =$	**42.** $x - 2 = 0$ $m =$ $b =$	**43.** $y - 1 = 2$ $m =$ $b =$
44. $y = -2x + 1$ $m =$ $b =$	**45.** $y = \frac{3}{4}x$ $m =$ $b =$	**46.** $y = -\frac{2}{3}x + 4$ $m =$ $b =$
47. $y = 3x - 2$ $m =$ $b =$	**48.** $x + y = 1$ $m =$ $b =$	**49.** $y = -\frac{2}{5}x + 2$ $m =$ $b =$

Part XVI. Scientific Notation: Notes and Review

A number written written in the form a x 10^n where a is a number greater than or equal to 1 and less than or equal to 9 (one non-zero digit) and n is an integer (positive or negative whole number or zero)
Examples: 4596 = 4.596 x 10^3 and 0.000045 = 4.5 x 10^{-5}

Directions: Rewrite each number in scientific notation.

50. 120000	**51.** 0.0487	**52.** 134.26	**53.** 10.45	**54.** 0.0000008
55. 3400	**56.** 75	**57.** 128.9	**58.** 0.000345	**59.** 100.25