

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.

6r6shtr

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     | $a + 0 = 0 + a = a$<br>0 is the Additive Identity | $a \cdot 1 = 1 \cdot a = a$<br>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 \_\_\_\_\_

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Summer Packet: Week 4

Parentheses Exponents **Multiplication or Division** (whichever comes first)  
Addition or **Subtraction** (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. $ 6^2 - 4^3  + 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 \_\_\_\_\_

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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. $(0, \frac{1}{2})$ 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. $y = 2x - \frac{1}{2}$ | 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

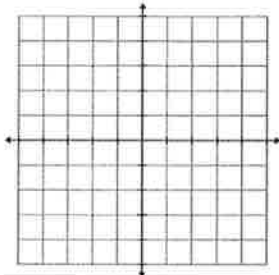
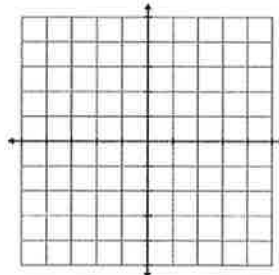
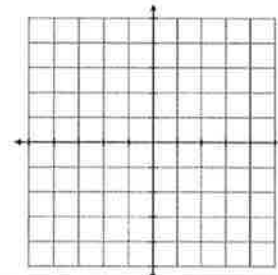
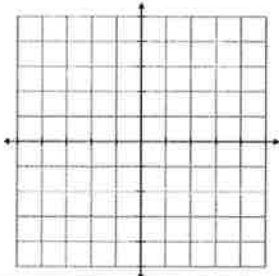
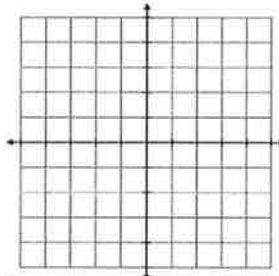
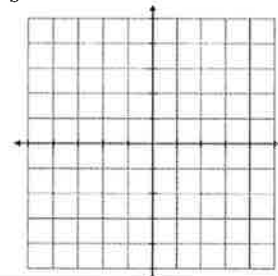
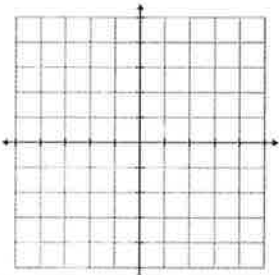
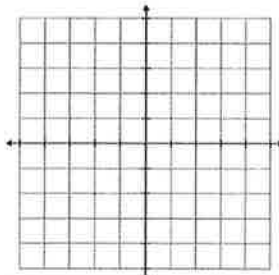
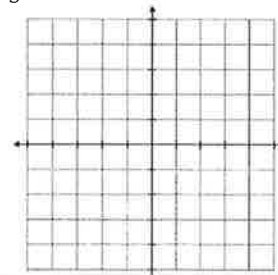
**Are You Ready for Algebra 1?**

Essential 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.

|  |  |   |
|--|--|---|
| <p><b>41.</b> <math>y = \frac{1}{2}x - 1</math></p>  <p><math>m =</math><br/><math>b =</math></p> | <p><b>42.</b> <math>x - 2 = 0</math></p>  <p><math>m =</math><br/><math>b =</math></p>         | <p><b>43.</b> <math>y - 1 = 2</math></p>  <p><math>m =</math><br/><math>b =</math></p>               |
| <p><b>44.</b> <math>y = -2x + 1</math></p>  <p><math>m =</math><br/><math>b =</math></p>         | <p><b>45.</b> <math>y = \frac{3}{4}x</math></p>  <p><math>m =</math><br/><math>b =</math></p> | <p><b>46.</b> <math>y = -\frac{2}{3}x + 4</math></p>  <p><math>m =</math><br/><math>b =</math></p>  |
| <p><b>47.</b> <math>y = 3x - 2</math></p>  <p><math>m =</math><br/><math>b =</math></p>         | <p><b>48.</b> <math>x + y = 1</math></p>  <p><math>m =</math><br/><math>b =</math></p>       | <p><b>49.</b> <math>y = -\frac{2}{5}x + 2</math></p>  <p><math>m =</math><br/><math>b =</math></p> |

**Part XVI. Scientific Notation: Notes and Review**

A number written in the form  $a \times 10^n$  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:  $4596 = 4.596 \times 10^3$  and  $0.000045 = 4.5 \times 10^{-5}$

**Directions:** Rewrite each number in scientific notation.

|                   |                   |                   |                     |                      |
|-------------------|-------------------|-------------------|---------------------|----------------------|
| <b>50.</b> 120000 | <b>51.</b> 0.0487 | <b>52.</b> 134.26 | <b>53.</b> 10.45    | <b>54.</b> 0.0000008 |
| <b>55.</b> 3400   | <b>56.</b> 75     | <b>57.</b> 128.9  | <b>58.</b> 0.000345 | <b>59.</b> 100.25    |