

Attached is the summer packet for students to complete to ensure their readiness for the Algebra 1 course at Penn's Grove. This packet will be due to their Algebra teacher on **Wednesday August 29<sup>th</sup> 2018** and will count as a formative grade (20%). All pages must show your work! These pages are the minimum practice for your child. Please use the interactive links below for additional resources for your child.

Your child will take a Prerequisite Quiz to assess their understanding of the content in this summer math packet on **Wednesday August 29<sup>th</sup> 2018** and will count as a performance grade (70%).

Have a wonderful summer. We are excited to have your child in our Algebra 1 course in the fall!

Penn's Grove Algebra 1 Teachers

### Algebra Interactive Resources

#### **Practice Integer Operations:**

*Just addition:* [http://www.sheppardsoftware.com/mathgames/integers/FS\\_Integer\\_addition.htm](http://www.sheppardsoftware.com/mathgames/integers/FS_Integer_addition.htm)

*Just subtraction:* [http://www.sheppardsoftware.com/mathgames/integers/FS\\_Integer\\_subtraction.htm](http://www.sheppardsoftware.com/mathgames/integers/FS_Integer_subtraction.htm)

*Just multiplication:*

[http://www.sheppardsoftware.com/mathgames/integers/FS\\_Integer\\_multiplication.htm](http://www.sheppardsoftware.com/mathgames/integers/FS_Integer_multiplication.htm)

*All operations:* [http://www.sheppardsoftware.com/mathgames/fruitshoot/FS\\_Mixed\\_Integers.htm](http://www.sheppardsoftware.com/mathgames/fruitshoot/FS_Mixed_Integers.htm)

*Game:* <http://www.math-play.com/Integers-Jeopardy/Integers-Jeopardy.html>

#### **COLOR CHIP INTEGER PRACTICE:**

*VIDEO*—Review of integer addition with color chips: [https://learnzillion.com/lesson\\_plans/6677-add-integers-using-color-counters#fndtn-lesson](https://learnzillion.com/lesson_plans/6677-add-integers-using-color-counters#fndtn-lesson)

*Addition:* [http://nlvm.usu.edu/en/nav/frames\\_asid\\_161\\_g\\_1\\_t\\_1.html?open=instructions](http://nlvm.usu.edu/en/nav/frames_asid_161_g_1_t_1.html?open=instructions)

*Subtraction:* [http://nlvm.usu.edu/en/nav/frames\\_asid\\_162\\_g\\_2\\_t\\_1.html?open=activities](http://nlvm.usu.edu/en/nav/frames_asid_162_g_2_t_1.html?open=activities)

*Khan Academy:* <https://www.khanacademy.org/math>

*First in Math:* <http://www.firstinmath.com/>

*Math-Play.com:* <http://www.math-play.com/> (choose 7th and 8th grade level)

*IXL*—This site is free for up to 10 problems a day: <https://www.ixl.com/> (choose 7th and 8th grade level)

<http://www.sheppardsoftware.com/math.htm>

[www.xpmath.com](http://www.xpmath.com)

# Algebra 1 at Penn's Grove

*Assessments:*

Algebra 1 Midterm (end of 1<sup>st</sup> semester)  
 PSSA ELA and PSSA Math  
 PSSA Science (8<sup>th</sup> only)  
 Algebra 1 Keystone

January  
 April 15—26  
 April 29—May 3  
 May 13—24

➤ Must earn a Proficient or Advanced in order to move into Geometry

<b>7th</b>	<b>8th</b>	<b>Algebra 1</b>
<p><b>The Number System</b>            *Apply and extend previous understandings of operations to add, subtract, multiply, and divide rational numbers.</p> <p><b>Ratios &amp; Proportional Relationships</b>            *Demonstrate an understanding of proportional relationships.</p> <p><b>Expressions and Equations</b>            *Represent expressions in equivalent forms            *Solve real-world and mathematical problems using numerical and algebraic expressions, equations, and inequalities.</p> <p><b>Geometry</b>            *Demonstrate an understanding of geometric figures and their properties.            *Solve real-world and mathematical problems involving angle measure, circumference, area, surface area, and volume.</p> <p><b>Statistics and Probability</b>            *Use random sampling to draw inferences about a population.            *Draw comparative inferences about populations.            *Investigate chance processes and develop, use, and evaluate probability models.</p>	<p><b>The Number System</b>            *Demonstrate an understanding of rational and irrational numbers.</p> <p><b>Expressions and Equations</b>            *Demonstrate an understanding of expressions and equations with radicals and integer exponents.            *Understand the connections between proportional relationships, lines, and linear equations.            *Analyze and solve linear equations and pairs of simultaneous linear equations</p> <p><b>Functions</b>            *Analyze and interpret functions.            *Use functions to model relationships between quantities</p> <p><b>Geometry</b>            *Demonstrate an understanding of geometric transformations.            *Understand and apply the Pythagorean theorem.            *Solve real-world and mathematical problems involving volume.</p> <p><b>Statistics and Probability</b>            *Investigate patterns of association in bivariate data.            *Investigate patterns of association in bivariate data.</p>	<p><b>MODULE 1</b>  <i>Operations and Linear Equations &amp; Inequalities</i></p> <p><b>A1.1.1</b> Operations with Real Numbers and Expressions</p> <p><b>A1.1.2</b> Linear Equations</p> <p><b>A1.1.3</b> Linear Inequalities</p> <p><b>MODULE 2</b>  <i>Linear Functions and Data Organizations</i></p> <p><b>A1.2.1</b> Functions</p> <p><b>A1.2.2</b> Coordinate Geometry</p> <p><b>A1.2.3</b> Data Analysis</p>

Full List of Assessment Anchors and Eligible Content:

Grade 7



Grade 8



Algebra 1



## Algebra Material List

For this class you will need:

- 1 ½ inch binder (or bigger, just for Algebra class)
- A spiral notebook (to be used for class notes—wide ruled or college ruled)
- 3 dividers labeled:
  - Warm Ups
  - Class & Homework
  - Assessments/Vocabulary
- White lined paper
- Pencils – **required** for all class work
- XL book cover (for textbook provided in class)
- Calculator (optional, but recommend the Texas Instrument TI-30XIIS model)

**ALGEBRA 1**

**SUMMER**

**PACKET**

## Operations with Integers

**Evaluate each expression.**

1.  $-5 \cdot 8 + 12$

2.  $20 - 4 \cdot (-6)$

3.  $3 \cdot (-9) + (-2) \cdot (7)$

4.  $150 \div (-5) + (-38)$

5.  $-48 \div 4 \cdot (-5) - 17$

6.  $-35 - 490 \div 7 + 12$

7.  $82 - (9 - 13) \cdot 9$

8.  $-27 - (4 + 4) \cdot 3$

9.  $90 \div (-6 - 3) + 45$

10.  $(16 + 2)(3) - 5(-5 + 3)$

11.  $-30 + 5(3 + 8) - 45$

12.  $25 \div [-4 + (-1)] - 9(3)$

13.  $36 \div 6 - (-25 + 15)(4)$

14.  $-42 + 70 \div (-2 - 3) + 84 \div (4 + 2)$

## Operations with Rational Numbers

1.  $-\frac{7}{15} + \frac{4}{5}$

2.  $-\frac{3}{4} - -\frac{1}{2}$

3.  $2\frac{1}{4} \cdot -\frac{8}{27}$

4.  $-2\frac{3}{4} \div -1\frac{3}{8}$

5.  $-17.023 - 0.96$

6.  $-29.5 + 9.84$

7.  $-4.36(-1.8)$

8.  $\frac{-36.9}{4.5}$

9.  $\left|-\frac{5}{8} + -\frac{2}{3}\right|$

10.  $|-8.6 + 41.36|$

## Writing Algebraic Expressions

**Translate each verbal description into an algebraic expression. Simplify the expression when you can.**

1. Sum of one-half  $t$  and one-third  $s$
2. Twenty subtracted from  $\frac{15}{23}b$
3. Product of  $5r$  and  $7$  divided by  $15$
4. 120% of the sum of  $w$  and one-twelfth  $u$
5. Nine-fourteenths of  $6x$  reduced by  $10$
6. 20% of one-half  $w$
7. Seven-tenths of the product of  $5p$  and  $3$
8. Sum of  $x$ , three-fourths  $x$ , and 90% of  $z$
9. Four times the difference of one-half  $x$  subtracted from three-eighths  $y$
10. 60% of the difference of five-eighteenths  $v$  subtracted from four-sixths  $w$

## Simplifying Algebraic Expressions

Use Distributive Property to simplify each expression.

1)  $7(1 - 8n)$

2)  $-8(b + 3)$

3)  $-6(9 - 9v)$

4)  $-(3x - 9)$

5)  $-9(n + 6)$

6)  $-10(a + 2)$

7)  $(5k - 10) \cdot -9$

8)  $-4(4 + 3p)$

Use Distributive Property AND Combining Like Terms to simplify each expression.

9)  $-6(x + 2) - 2$

10)  $4n - (7 - 6n)$

11)  $-3 - 7(-3 - 6v)$

12)  $-5(a - 6) + 2a$

Use Distributive Property AND Combining Like terms to simplify each expression.

13)  $7(5n - 8) + 6(4 + 6n)$

14)  $-(3a + 2) - 3(5a + 7)$

15)  $-5(1 + 2k) - 8(-4 + 5k)$

16)  $5(-3p + 7) + 5(p - 1)$

17)  $-5(x + 2) + 5(x - 5)$

18)  $-4(1 - 8n) - 4(8n + 4)$

Use Distributive Property AND Combining Like terms to simplify each expression.

19)  $9(m + 8) + 11(3m + 4)$

20)  $11(8r + 3) - 2(-9 + 6r)$

21)  $7(-12x - 3) + 10(6x + 7)$

22)  $-9(1 - 10n) - 2(3n + 9)$



## Real-World Problems

### Solve. Show your work.

1. Amy had  $x$  dollars. After Sam gave her \$27, she had \$139. How much money did she have initially?
2. The sum of two facing page numbers in a book is 145. What are the two page numbers?
3. At Middletown Middle School, Mary must score an average of at least 80 points on 4 tests before she can apply for the scholarship. If she scored 79, 81, and 77 for the first three tests, what must she score on her last test?
4. The perimeter of an isosceles triangle is 32.7 inches. If the length of its base is 9.5 inches, find the length of each of the other two sides.
5. Adrienne is planning to bake some chocolate, strawberry, and raisin muffins for a party. She was asked to bake half as many chocolate muffins as raisin muffins and three times as many strawberry muffins as chocolate muffins. If she only had enough ingredients to bake 480 muffins, how many raisin muffins did she bake?