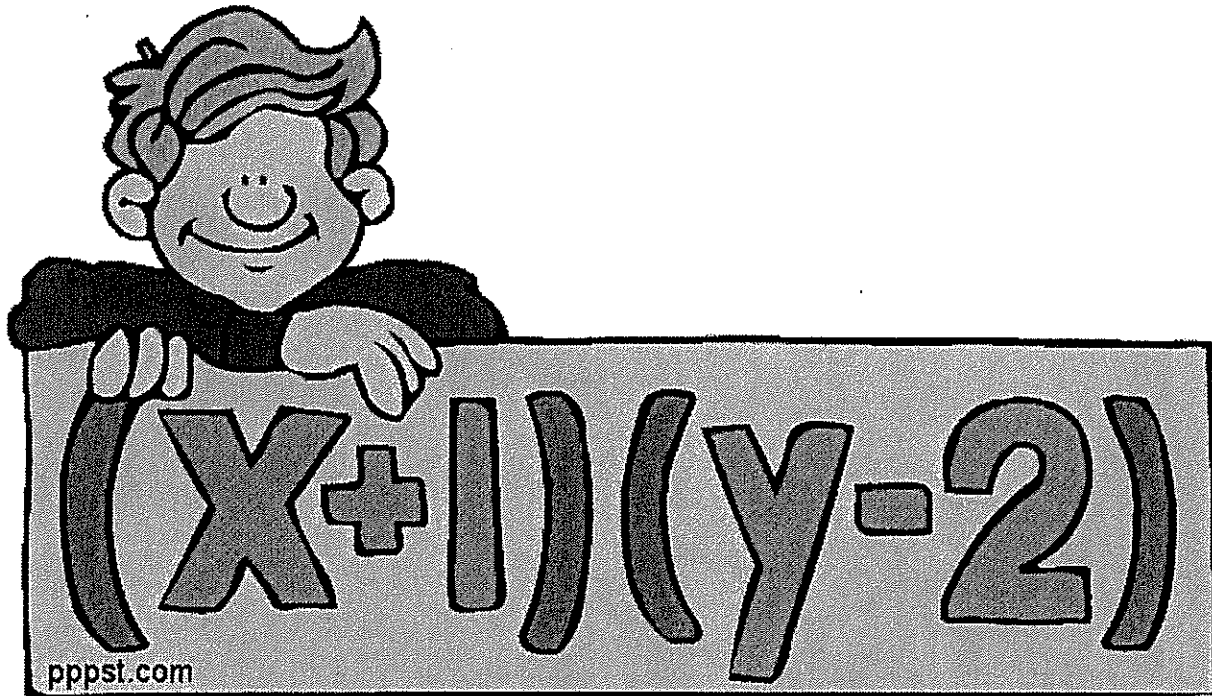


Washington Latin PCS
Summer Math Packet
For students entering Algebra 1B



This summer math packet was developed to provide students an opportunity to review math objectives and to improve math performance.

Summer 2019

In this booklet you will find math activities that will help you review and maintain math skills and prepare you for Algebra 1B. These are activities that should be done throughout the summer. They are not intended to be completed in the last 2 or 3 days before school begins.

The packet and the work should be returned to your math teacher on the first Monday of school, August 26. The packet will count as a 50 point grade in the homework category for the 1st quarter.

If you are not proficient with multiplication facts and solving one step equations, please practice over the summer.

Student Responsibilities

Students will be able to improve their own math performance by:

- Completing the summer math packet
- Reviewing math skills throughout the summer.

Student Signature

Date

Parent or Guardian Responsibilities

Parents will be able to promote student success in math by:

- Asking students to explain why their answers are correct,
- Monitoring student completion of the summer math packet,
- Talking about the concepts with students and listening to student questions and comments.

Parent/Guardian Signature

Date

Washington Latin Summer Algebra 1B Packet

Table of Contents

<i>Page(s)</i>	<i>Objective</i>	<i>Complete by:</i>
2	Decimal Operations	June 24
3	Fraction Operations	July 1
4	Order of Operations	July 8
5	Perfect Squares and Square Roots	July 15
6 and 7	Integer Operations	July 22
8	Solving Equations	July 29
9	Inequalities	August 7
10	Sequences and Patterns	August 14

On all pages of this review, calculators may be used. Students and Parents should be aware that in many cases a calculator will be a helpful tool, but will not replace the student's role in determining answers. If you have not already done so, please purchase a TI-34 for the coming year.

Decimal Operations

Tasks: Each task requires students to use what they know of operations with fractions to determine the missing values.

Task #1:

$$\text{Smiley Face} + \text{Smiley Face} = 0.8$$

$$\text{Star} + \text{Star} + \text{Star} = 10.2$$

$$\text{Smiley Face} = \text{Star}$$

Task #2:

Jen, Terry, Cheryl, Ben, and Aaron have spare change in their pockets. Each person has a different amount: \$9.38, \$7.52, \$3.62, \$4.73 and \$1.27.

Together, Terry and Aaron have \$10.65.

Together, Terry and Ben have \$13.00.

Together, Cheryl and Aaron have \$6.00.

Doubled, Cheryl will have \$9.46

Jen has _____ Terry has _____ Cheryl has _____
Ben has _____ Aaron has _____

Need help?

<https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-fractions-decimals>

Fraction Operations

Directions: For each section a number bank is provided. Using the numbers from the bank only once, complete the missing parts of each equation.

Task #1

Number Bank for Task #1								
1	2	3	4	5	6	7	8	9

$$\frac{\square}{\square} \div \frac{\square}{\square} = 6$$

$$\frac{7}{\square} \times \frac{\square}{\square} = \underline{5}$$

$$\frac{\square}{\square} \times \frac{6}{5} = \underline{1}$$

Task #2

Number Bank for Task #2									
0	1	2	3	4	5	6	7	8	9

$$\frac{\square}{\square} + \frac{\square}{\square} = 3$$

$$\frac{\square}{\square} - \frac{\square}{20} = 0$$

$$\frac{\square}{\square} + \underline{4} = 1$$

Need help?

<https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-fractions-decimals>

Order of Operations

When evaluating numeric expressions, we complete the mathematical operations in a set order: **Parenthesis, Exponents, Multiplication and Division, Addition and Subtraction (PEMDAS)**. Use the order of operations to answer each question.

Example 1: Determine the smallest non-negative number that you can make from 2, 3, 5, 7, and 11. You may only use each operation (+, -, ×, ÷) once.

$$\text{Response: } [(11 + 3) - (2 \times 7)] / 5 = 0$$

Example 2: Using 1, 7, 8, 9, and 9 create a problem in which the answer equals 16. You may use operations more than once.

$$\text{Response: } (9 \div 9) \times (7 + 8 + 1) = 16$$

1. Using 1, 3, 5, 9, and 9 create a problem in which the answer equals 5. You may use operations more than once.
2. Using 8, 11, 9, 1, and 8 create a problem in which the answer equals 2. You may use operations more than once.
3. Using 4, 16, 10, 24, and 25 create a problem in which the answer equals 1. You may use operations more than once.

Need help?

<https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-factors-and-multiples/cc-6th-order-operations/v/introduction-to-order-of-operations>

Perfect Squares Roots and Square Roots

Task #1: In this task you will be given clues about particular perfect squares and square roots. Using the clues name the perfect square.

EXAMPLE: Doubled, my value is -12, but my product is the 36. What number am I? -6

1. Doubled, my value is 18, but my product is 81. What number am I? _____
2. Doubled, my value is 22, but my product is 121. What number am I? _____
3. Doubled, my value is 16, but my product is 64. What number am I? _____

Task #2: Complete the table below. In the table you must complete the area diagram, the equivalent expression, the exponent form and the value.

Area Model	Equivalent Expression	Exponential Form	Value
	2×2	2^2	4
	5×5		
			16
		6^2	

Integer Operations: Addition and Subtraction of Integers

Laws for Addition and Subtraction of Integers:

Ex #1: $4 + -3 = 4 - 3 = 1$

Ex #2: $4 + -5 = 4 - 5 = -1$

Ex #3: $-4 + -5 = -9$

Ex #4: $-4 + 5 = 1$

Ex #5: $4 - -5 = 4 + 5 = 9$

Ex #6: $-4 - -5 = -4 + 5 = 1$

Task: Determine the value (or values) of n that would satisfy the equation.

Example: $n - 4 =$ a negative number.

Response: N must be a number less than 4. If n is 4 or more, the answer is not negative. For example $5 - 4 = +1$ and $4 - 4 = 0$. But if we use a number less than 4, it will be negative. For example $3 - 4 = -1$ and $-2 - 4 = -6$.

1. $n + 4 =$ a negative number.

2. $9 - n =$ a positive number.

3. For what values of a is $a > a + a$? In your answer give examples of values of a which make the inequality true.

4. For what values of n is $4 - n > n$? In your answer give examples of values of n which make the inequality true.

Need help?

<https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-negative-numbers>

Integer Operations: Multiplication and Division of Integers

Laws for Addition and Subtraction of Integers:

Ex #1: $4(-3) = -12$

Ex #2: $-4(-3) = 12$

Ex #3: $-10 \div 5 = -2$

Ex #4: $-10 \div -5 = 2$

Task: Determine the values of n that would satisfy the equation.

Example: $-6n =$ some positive number.

Response: In order for $-6n$ to be a positive number, n must be any negative number. The product of two negatives is always positive. For example, $-6(-2) = +12$. If n is a positive number, the product would still be negative. Therefore, n must be negative to get a positive answer.

1. $-4n =$ some negative number.
2. $-4n =$ some positive number that is greater than 28.
3. $100 \div n =$ some negative number between -20 and -1
4. $(-3)^n =$ a positive number.
5. For what values of a is $-2a > a$? In your answer give examples of values of a that make the inequality true.

Need help?

<https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-negative-numbers>

Solving Equations

Task #1: Solve the following problems. **SHOW ALL WORK.** Use a separate sheet of paper (if necessary) and staple to this page.

1. $-4h - 6 = 22$

2. $\frac{m}{-5} + 6 = -4$

3. $-25 = -4r + 5$

4.

$$6 = -7 + \frac{x}{-3}$$

5. $5g - 3 = -12$

Task #2: For each equation, determine if the equation is always true, never true or sometimes true. If the equation is sometimes true, determine the numbers that make it true.

6. $6y + 5 = 4y + 5$

7. $5x + 8 = 8 + 5x$

8. $7p - 8 = 7p + 6$

9. $x^2 = 100$

10. $-2(6 - 10n) = 10(2n - 6)$

11. $7(1 - y) = -3(y - 2)$

Need Help?

<https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-solving-equations>

Inequalities

Task #1. Solve each inequality and then graph the solution set on the number line. Remember that when multiplying or dividing by negative numbers, you must reverse the inequality.

1. $13 < 9 + 2x$



2. $-2x + 5 \geq -12$



3. $\frac{1}{4}x + 9 < 2$



Task #2:

4. Given: $A > 0$ and $B < 0$. Is $A < A(B)$?

5. Given: $5 > 4$. For what values of x is $5x > 4x$?

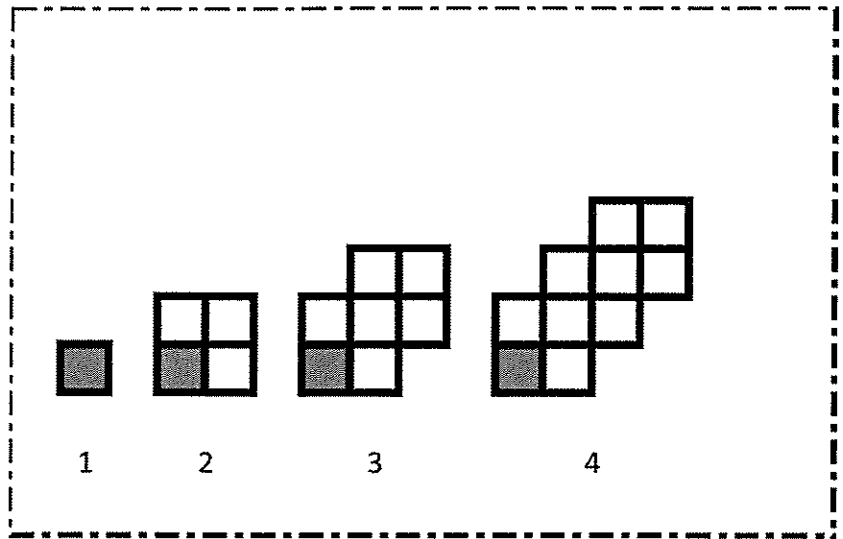
Need Help?

https://www.khanacademy.org/math/algebra/linear_inequalities

Sequences and Patterns

Directions: In this task you are asked to examine and analyze the sequence represented in the diagram to the right.

1. Look at the shapes in the diagram to the right. How does the diagram change from the stage 1 to stage 2?



2. Describe anything that remains constant at all stages of the diagram

3. Using the diagram, complete the table of values.

Stage	1	2	3	4	5	6	7	8	9
Number of Tiles									

4. Is this an Arithmetic Sequence, a geometric sequence, or neither? Justify your answer.

5. Graph the values from the table on the coordinate plane.

6. Write a functional rule to give the number of tiles at any (n) stage.

