

Summer Work Prior to Introduction to Algebra I

A student entering into Introduction to Algebra I at Porter-Gaud School is expected to:

- keep an organized notebook
- complete every homework assignment to the best of one's ability
- be an active learner by following along and taking detailed notes
- ask questions and participate in class on a daily basis
- seek help outside of class if needed
- respectfully work with classmates and the teacher
- work with and without a calculator

Summer work is given to ensure that the student described above has mastered certain topics and skills that are essential for success in Algebra I. These topics will not be retaught during the year.

Students may use notes, books, or other resources to help them complete this assignment, but should complete on their own.

This work should be completed without the use of a calculator.

Student Name _____

Topics Covered in this Assignment

I. Order of Operations

- parentheses
- exponents
- multiplication/division
- addition/subtraction

II. Multiplying and Reducing Fractions

- multiply numerators with numerators and denominators with denominators
- make sure there is no factor in the numerator and the denominator

III. Dividing and Reducing Fractions

- dividing by a number is the same as multiplying by the reciprocal of that number
- make sure there is no factor in the numerator and the denominator

IV. Converting between Fractions, Decimals, and Percents

- to convert the fraction to a decimal, divide the numerator by the denominator
- to convert from a decimal to a percent, multiply the number by 100

V. Addition, Subtraction, Multiplication, and Division of Signed Numbers

- adding two positive numbers results in a positive number
- adding two negative numbers results in a negative number
- adding a positive with a negative results in the sign of the greater number
- multiplying/dividing two positive or two negative numbers results in a positive
- multiplying/dividing a positive number and a negative number results in a negative

VI. Solving Equations

- get the variable alone on one side of the equation

Part I. Simplify the following using the order of operations.

1. $4^2 - (2 \cdot 3^3 \cdot 1) \div 2$

2. $(6 \cdot 2) + 2$

3. $\left[(-2)^2 - 6 \cdot 7\right]$

4. $9^2 + \left[(-1)^3 + 3\right] \cdot 9$

5. $3 \div 1 \cdot 2^3 - 5$

6. $2 \cdot 2 \cdot 2 \cdot 2 - 2$

7. $(-2)^3 + (2 - 1 - 1)$

8. $2 + 5(2 \cdot 5 - 3)$

9. $5 - 2(7 \cdot 2 - 6)$

10. $-3 \cdot 4 - 5 \cdot 6$

11. $\frac{3 \cdot 2 - 6}{7 - 5}$

12. $\frac{2^3 - 2^2}{2^2 - 2}$

Part II.**Multiply each of the following. Make sure to simplify your answers.**

1. $\frac{10}{12} \cdot \frac{4}{10}$

2. $\frac{12}{13} \cdot \frac{1}{4}$

3. $\frac{6}{10} \cdot \frac{5}{12}$

4. $\frac{3}{6} \cdot \frac{1}{2}$

5. $\frac{1}{3} \cdot 9$

6. $3 \cdot \frac{10}{12}$

7. $\frac{14}{15} \cdot 5$

8. $1\frac{3}{7} \cdot \frac{2}{6}$

9. $1\frac{1}{5} \cdot \frac{4}{5}$

10. $2\frac{1}{6} \cdot 5\frac{1}{4}$

Part III.**Divide each of the following. Make sure to simplify your answers.**

1. $\frac{1}{6} \div \frac{9}{12}$

2. $\frac{3}{6} \div \frac{4}{6}$

3. $\frac{2}{7} \div \frac{2}{5}$

4. $\frac{8}{9} \div \frac{3}{10}$

5. $3\frac{1}{6} \div \frac{5}{6}$

6. $\frac{4}{9} \div 2\frac{1}{2}$

7. $1\frac{1}{2} \div \frac{5}{8}$

8. $\frac{1}{2} \div 5$

9. $8 \div \frac{2}{5}$

10. $3\frac{1}{5} \div 1\frac{2}{3}$

Part IV. Complete the following table.

	Fraction (in simplest form)	Decimal	Percent
1	$\frac{16}{100}$		
2	$\frac{3}{5}$		
3	$\frac{7}{8}$		
4	$\frac{5}{6}$		
5	$2\frac{1}{4}$		
6		0.45	
7		0.002	
8		1.75	
9		0.075	

Part V. Perform the indicated operation.

1. $-3(8)$

2. $5 - 21$

3. $\frac{-3}{6}$

4. $1(-1)(1)(-1)(-1)$

5. $-6 + (-9)$

6. $18 / (-3)$

7. $-5 - 21$

8. $\frac{-10}{-12}$

9. $7 - 8$

10. $7(-8)$

11. $5 - 4 - 3 - 2 - 1$

12. $-6(-1)$

13. $(8) - 3$

14. $-8 - 2$

15. $4(-2)(-3)$

16. $4 + (-3) - 6$

17. $-8 - 6$

18. $(-1)(-2)(-3)(-4)$

19. $3 - 7$

20. $3 + (-12)$

Part VI. Solve each equation for the variable.

1. $6 = 2x$

2. $-7a = -14$

3. $7y = 0$

4. $3n = -186$

5. $3b + 2b = -10$

6. $35 = x + 6x$

7. $3a - 4a = 4$

8. $8x - 2x = 30$

9. $9x - 12x = -15$

10. $5 = 2p - 7$

11. $-8 = 3y + 2$

12. $-5x = 3x$

13. $6 - 2x = -10$

14. $5 = 2 - 3x$

15. $2y + 5 = 5y + 2$

16. $3x - 4 = 2x - 24$

17. $8 - 2y = 1 + y$

18. $12 - 2a = 4 + a$

19. $7(2a + 3) = 21$

20. $3(x + 6) = -2$