

## Algebra 1 Summer Project

**DUE YOUR FIRST MATH CLASS OF THE SCHOOL YEAR AUGUST 19, 2014**

Name : \_\_\_\_\_

As an incoming Algebra 1 student, it is important that you are proficient in several skills from previous math courses. This project contains examples of the skills you are expected to know as you enter Algebra class this year. If you need assistance or further practice with any of these skills, we strongly recommend that you visit one of the free websites listed below:

[www.khanacademy.org](http://www.khanacademy.org) : This website offers a list of videos that explain how to solve various types of math problems. On the main page, scroll down to "Browse the Library" and either select Core PreAlgebra or Core Algebra for help with solving various types of math problems.

[www.intmath.com](http://www.intmath.com) : This interactive math link offers help with the number system. On the main page, select "Numbers" located next to "Algebra".

[www.math.com](http://www.math.com) : This website offers help with algebraic problems. On the main page, click "algebra" on the left side of the page. Then select a topic to explore.

[www.yourchildlearns.com/us\\_map.htm](http://www.yourchildlearns.com/us_map.htm) : This website gives an interactive map of the United States.

There are 3 main components to this summer project.

**1. Map your Mathematical Road Trip**

- ☐ Answer questions on pages 2-5 of the packet to find the coordinates of your position as you travel from New Jersey to California and back again.
- ☐ SHOW ALL WORK
- ☐ Plot the coordinates on your map of the United States

**2. Pack your bag activity**

- ☐ Look up the average annual temperatures in the states you visited.
- ☐ Answer questions that help you determine what clothes to pack.

**3. Make a brochure documenting your trip. Include the following:**

- ☐ A list, in order, of the states you plotted points in on the Map for the project.
- ☐ The capital of each state you visited.
- ☐ One other fact of interest about each state you visited. For example, you can give the state bird, a popular tourist attraction, history fact, etc.
- ☐ Decorated Illustrations including COLOR. Be creative!

Mrs. Primus-Brown will be available on July 9, 2014 from 9:00 AM -12 NOON for students who require extra help on the summer project. If you are going to attend this session, please email her at [ddbrown@greenville.k12.sc.us](mailto:ddbrown@greenville.k12.sc.us) to let her know you are attending so that adequate arrangements can be made. All algebra teachers will be available via email periodically throughout the summer if you have questions or concerns.

We look forward to a great year in Algebra!

Mrs. Sera Tanner

Mrs. Deborah Primus-Brown

Mrs. Sharon Merck

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## I. Map Your Mathematical Road Trip!

Directions: Answer each of the following problems showing all work. The solutions will give you the x- and y-coordinates of the points you will plot on your map, in order, as you travel from New Jersey, to California, and back. NOTE: You do not retrace your path to return home.

Bon Voyage: Start your trip from New Jersey!

### Operations with Real Numbers: Simplify, showing all work.

State #1) NEW JERSEY

x-coordinate:  $-41 + 34 - (-18)$

y-coordinate:  $-25 + 56 + (-29)$

➔ Plot the point (     ,     ) on your map!

State #2)

x-coordinate:  $\frac{-15}{-\frac{3}{2}}$

y-coordinate:  $-\frac{1}{2} - \frac{7}{18} - \frac{1}{9}$

➔ Plot the point (     ,     ) on your map!

State #3)

x-coordinate:  $2|-1 - 3.5|$

y-coordinate:  $-\frac{1}{2}|2(-6)|$

➔ Plot the point (     ,     ) on your map!

BE SURE TO PLOT AND CONNECT YOUR POINTS, IN ORDER!

State #4)

x-coordinate:  $1 \div \frac{1}{4}$

y-coordinate:  $\frac{-13}{24} - \frac{23}{8} + \left(-\frac{7}{12}\right)$

➔ Plot the point (     ,     ) on your map!

### Order of Operations: Simplify, showing all work.

State #5)

x-coordinate:  $[50 - (5^2 \cdot 2)] \div 4$

y-coordinate:  $5 \cdot 2^3 \div (-8)$

➔ Plot the point (     ,     ) on your map!

State #6)

x-coordinate:  $\frac{5-5^2}{18-4^2+2}$

y-coordinate:  $2 - 8 + 4$

➔ Plot the point (     ,     ) on your map!

BE SURE TO PLOT AND CONNECT YOUR POINTS, IN ORDER!

**Evaluating Expressions: Evaluate the expression when  $x = -1$  and  $y = 2$ . Show your work.**

State #7)

x-coordinate:  $y^2 + 11x$

y-coordinate:  $y - 2(x + 3)$

Hint: You should now be at California

➔ Plot the point (     ,     ) on your map!

State #8)

x-coordinate:  $\frac{x^2 y^4}{-4}$

y-coordinate:  $1 - 2x$

➔ Plot the point (     ,     ) on your map!

BE SURE TO PLOT AND CONNECT YOUR POINTS, IN ORDER!

## Solving Equations: Solve for the variable. Show your work.

State #9)

x-coordinate:  $5 - 2x = 5$

y-coordinate:  $\frac{2}{3}y = 4$

➔ Plot the point (     ,     ) on your map!

### RETURNING HOME TO NEW JERSEY!!!

State #10)

x-coordinate:  $-3x + 2x + 14 = 3$

y-coordinate:  $4y + 6 - 2y = 10$

➔ Plot the point (     ,     ) on your map!

BE SURE TO PLOT AND CONNECT YOUR POINTS, IN ORDER!

## II. Pack your Bag!

1. In order to pack a bag you need to know what type of weather to expect in each state.

Go to <http://www.currentresults.com/Weather/US/average-annual-state-temperatures.php> and look up the average temperature for each of the 9 different states you visited on your road trip. Record the data in the table below:

State (give the name of the state)	Average temperature (in °F)
1) New Jersey	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	

(NOTE: You do NOT have to include New Jersey in the table twice.)

2.

a. Find the mean of the temperatures in your data table. Show or explain your work.

b. Find the median of the temperatures in your data table. Show or explain your work.

c. Find the mode of the temperatures in your data table. Show or explain your work.

d. Find the range of the temperatures in your data table. Show or explain your work.

3. Suppose that you made one more stop on your road trip to a state that happened to have a negative average temperature.

a. How would including this temperature affect the mean temperature you found in problem 2? Explain.

b. i. How would including this temperature affect the median temperature you found in problem 2? Explain.

ii. Explain how you would calculate the new median now that you have 10 data values. Then calculate the new median.

c. How would including this temperature affect the mode temperature you found in problem 2? Explain.

d. Which do you think would be affected the most by this new negative temperature, the mean, the median, or the mode? Explain.

### III. Make a Brochure

III. Now MAKE A BROCHURE of the states in which you plotted points. Your brochure should include:

1. A list, in order, of the states you plotted points in on the Map Your Mathematical Road Trip project.
2. The capitol of each state you visited.
3. One other fact of interest about each state you visited. For example, you can give the state bird, a popular tourist attraction in the state, etc.
4. Some decorations or illustrations. Be creative and have fun!

**Brochure must be a tri-fold (see examples) made from a sheet of paper no smaller than a 8 ½ "by 11" and no bigger than a 22" by 28" poster board.**

**Here are examples of how you can fold your brochure:**

**Barrel Fold Brochure:**



**Z-Fold Brochure:**



I, \_\_\_\_\_, have tried to the best of my ability to understand and complete the examples in this Algebra summer Project.

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Parent Signature



# Algebra 1 Summer Packet

## Scoring Rubric

### DUE YOUR FIRST MATH CLASS OF THE SCHOOL YEAR

The Algebra 1 Summer Packet will be scored as follows:

Components	Percentage	
I. Map Your Mathematical Road Trip (50%)	40%	For completed problems (2% per x or y-value)
	10%	completed map
II. Pack Your Bag (25%)	5%	#1. Temperature table
	12%	# 2. Mean, Median, Mode, Range (3% each)
	8%	# 3. Response to Question (2% for each part)
III. The Brochure (20%)	5%	A list, in order, of the states plotted on the map
	5%	The capital of each state visited
	5%	One other fact of interest about each state
	5%	Creativity, decorations, illustrations
A parent signature (5%)	5%	
Total:	100%	

Students will receive the following credit for each problem in section I “Map Your Mathematical Road Trip”

	2%	1%	0%
<b>Completion</b>	Question is answered correctly and relevant work is shown.	Question incorrect but relevant work is shown. or Question is correct but no work is shown.	Question is not answered or no work is shown where specified.

