



**Algebra I – Solving Systems of Equations
Group Cell Phone Project**

Names _____

Go to <http://juliecummins.weebly.com/group-project.html> to get started on this project. All links are provided on this website. You and your group members will have two class periods to work on this. If you need extra time, you must use academic assist or time outside of school.

Step 1: What kind of cell phone plan do you want?

Use the links provided to decide what kind of plan you want, iPhone or Android, and the amount of minutes, text and data you want. Then record your selections in the table below (you can write \$79.99 as \$80 for simplicity). Make sure each company has a different price.

Plan type (iPhone, Android, or basic) _____
Peak minutes _____ Calls to landlines _____ Text _____ Data _____

Company Name			
Monthly Fee			

Step 2: What kind of phone do you want?

Use the links to research cell phone options from the different companies. You will only select one phone per company you chose in Step 1, but make sure the phone you select matches the plan type. Again, you can write \$99.99 as \$100 for simplicity.

Company Name			
Type of Phone			
Cost of Phone			

Step 3: Write your Equations.

Define your variables and write equations representing the cost of phone ownership for each company.

x represents _____ y represents _____

Company Name	1.	2.	3.
Algebraic Equation			

Then use the equations to make a table of values showing the cost of ownership for the first year of the cell phone contract.

Company 1:			Company 2:			Company 3:	
x	y		x	y		x	y
0			0			0	
1			1			1	
2			2			2	
3			3			3	
4			4			4	
5			5			5	
6			6			6	
7			7			7	
8			8			8	
9			9			9	
10			10			10	
11			11			11	
12			12			12	

Step 4: Algebraic Comparison

Pair up the equations you write in Step 3 and use substitution or elimination to solve each system.

Compare companies 1 and 2	Compare companies 2 and 3	Compare companies 1 and 3

Step 5: Graphic comparison

Use the link provided to create a graph for the equations you have written. Follow the directions online and email the results to jcummins@bryanschools.net

Step 6: Analysis

Explain the results of your graphic and algebraic comparisons. For each pair of plans, discuss which is cheaper/more expensive in terms of the months of ownership. What does the solution you found in Step 3 and Step 4 mean for this problem?

Compare companies 1 and 2	Compare companies 2 and 3	Compare companies 1 and 3

Which cell phone plan will you choose? Support your choice with mathematical reasoning.

What other factors might influence your decision?

Evaluation Rubric

	4 points	3 points	2 points	1 point	0 points
Research and Recording (Steps 1 & 2)	All information is accurately recorded and all instructions are followed regarding phone and plan selections.	All information is accurately recorded and most instructions are followed regarding phone and plan selections.	Minor errors in recording data. Instructions not followed completely regarding phone and plan selections.	Major errors in recording data. Instructions not followed.	Sections not completed.
Writing Equations and Table of Values (Step 3)	Written equations and table of values for all three companies are completed with 100% accuracy.	Written equations and table of values for all three companies are completed with only minor errors.	Written equations and table of values contain several errors.	Written equations and table of values contain major errors.	Section not completed.
Algebraic Comparisons (Step 4)	All pairs of equations are solved accurately. Work is neat, well organized and labeled.	All pairs of equations are solved with only minor errors. Work is neat and organized.	Algebraic work contains major errors. Work is difficult to follow or read.	Algebraic work is not shown.	Section not completed.
Graphic Comparisons (Step 5)	Graphs have accurate labels and numbering and are completed with 100% accuracy.	Graphs have accurate labels and numbering and are completed with only minor errors.	Labels are inaccurate. Graphs contain several errors.	Labels are missing. Graphs contain major errors.	Section not completed.
Analysis (Step 6)	Questions are completely answered using mathematical reasoning to support the answers. Uses complete sentences with academic English.	Questions are answered but may be missing mathematical support. Uses complete sentences with academic English.	Questions are answered without mathematical support, showing little understanding of concepts. Uses complete sentences.	Questions are answered with sentence fragments and show little understanding of mathematical concepts used.	Section not completed.