

# Cell Phone Challenge Problem

*Seventh and Eighth Grade Math*



**Developed by:**

The teachers, students, and mentors in the  
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## 1. CELL PHONE CHALLENGE PROBLEM

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### 1.1. INTRODUCTION

Cell phones originated in 1983 with the Motorola DynaTAC 8000x, and the rest is history. The cell phone was incredibly expensive; however it became a pop culture symbol. The cell phone started out in the sales and business world, but has spread into personal use. Cell phones were first created as very large devices but throughout time they have increasingly gotten smaller.

Cell phones were first created for just talking, but gradually features like voicemail were added. Eventually, cell phone manufactures began to realize that they could integrate other features. The earliest smartphones let users access email and use the phone as a fax machine, pager, and address book. In recent years, the cell phone has shifted from a verbal communication tool into a multimedia tool. We now currently use phones to surf the web, check emails, take photos, text our contacts, and update our social media status. The upgrades in cell phones have started a trend of replacing our other gadgets such as cameras. The newest update to phones is the concept of applications – the Apple iPhone has changed the consumer expectations.

With the cell phone changing so much over the past 25 years, the price has changed as well. With the smartphone taking over the market, people are now more worried about data packages and unlimited text rather than price per minute. Because of these issues, the entire landscape of pricing has changed. It is very uncommon to see a single person have a plan, but rather a family or a group of people bundling their services together.

Another aspect that has changed over time is the cost and complexity of cell phone plans. With the trend of inflation and more people receiving a cell phone at much earlier ages, more and more people are choosing group/family plans. With the development of more cell phone companies, the consumer now has a better chance to find a plan that fits their needs. You will explore this and many more options in the following situation.

### 1.2. PROBLEM

You are tasked with finding the most effective and responsible cell phone plan for you and/or your family. Research your current cell phone plan situation and determine how much it would cost you or your family to purchase the plan.

### 1.3. PARAMETERS

In this project you will be setting the majority of the parameters as it relates to your needs as well as your family's needs. The main given parameter is that you must have 5 different cell phone companies listed based on accurate and timely research.

As a consumer, we look for the most effective and cost efficient plans we can find. If you are currently in a group/family or an individual plan, you must find the cost of that specific plan. Also research and determine if a new family plan would be a logical choice.

#### 1.4. PROJECT WRITE-UP

- A statement of the problem
- A list of parameters
- Work Cited Page
  - All research recorded and documented correctly
- A diagram and graph showing the system of linear equations (a line for each of the cell phone companies phone plans)
- Must research 5 different cell phone plans.
- Each cell phone plan must contain the plan in the following 4 forms
  - Words
  - Unit Rate
  - Equation
  - Graph
- The total cost for each individual and family plan from all 5 different companies and everything that plan includes.
- A minimum of one page argument letter to your parents discussing and explaining which cell phone plan you have decided to go with and why. Describe when specific cell phone plans work better for your situation compared to others. Your solution must contain a graph of all 5 different cell phone plans in a system of equations.

#### 1.5. RUBRIC

Category	Components	Points Earned	Comments
<i>Calculations</i>	- 5 different cell phone plans all presented in the following four formats <ul style="list-style-type: none"> <li>• Words</li> <li>• Graph</li> <li>• Unit Rate</li> <li>• Equation</li> </ul>	/20	
<i>Project Write-Up / Parent Argument Letter</i>	- All components of all 5 plans and which one to use and why	/40	
<i>Solution Presentation</i>	- Presentation of solution is prepared with visuals, is easy to follow,	/15	

	and lasts between 3-5 minutes		
<i>Assumptions</i>	- Any and all assumptions are stated and explained at beginning of appropriate section	/10	
<i>Grammar/Mechanics</i>	- Correct spelling and punctuation - Units illustrated appropriately - Layout is easy to follow	/10	
<i>Research &amp; Work Cited Page</i>	- All research used in project is found under Works Cited page and is consistent in format	/5	
<i>Total</i>		/100	