

# Cell Phone Plan Investigation

Investigating Piecewise Functions

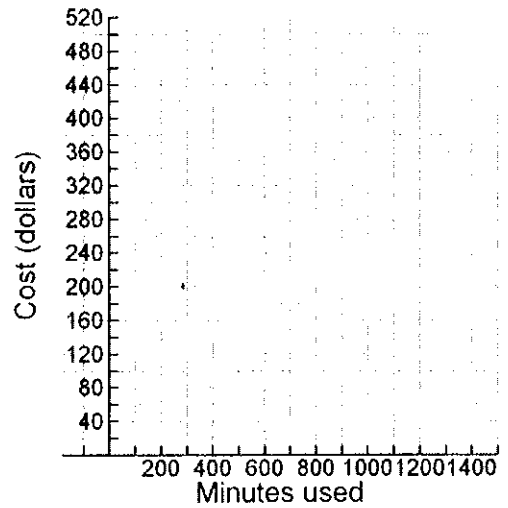
**“When am I ever going to use this?”**  
 Using the concepts in this worksheet, you will be able to determine your monthly cell phone cost based on the number of minutes used.

In 2008, Verizon offered the following cell phone plans to consumers. (Source: www.verizon.com)

Verizon: Nationwide Basic			
Plan	Monthly Anytime Minutes	Monthly Fee	Charge for Extra Minutes
Plan 1	450 minutes	\$39.99	\$0.45 per minute
Plan 2	900 minutes	\$59.99	\$0.40 per minute
Plan 3	1350 minutes	\$79.99	\$0.30 per minute

1. Create a piecewise function model for the monthly cell phone cost as a function of the total number of minutes used in the month for each of the three plans.

2. Graph each of the functions from (1) on the axes below.



3. Referring to the graph in (2), determine which of the three plans is least expensive for each of the four usage levels: 475 minutes, 800 minutes, and 1100 minutes.

4. Use the function equations in (1) to verify the accuracy of the results in (3).

5. The table below shows a person's cell phone usage (in minutes) over a year.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
512	598	627	702	639	821	915	979	815	911	820	938

Which plan would cost the consumer the least amount money over the year?