

Name _____

Date _____

CHAPTER
4

Project: Carnival Time

For use after Chapter 4

Objective Compare the expenses and income of a carnival to determine profitability.

Materials paper, pencil, graphing calculator or computer (optional)

Investigation You are on a planning committee for a one-day school carnival. Your committee must decide what activities to include and what to charge. You are considering the two options shown at the right.

Option 1	Option 2
\$2.00 admission	No admission
\$.50 per ticket	\$1.00 per ticket

- List the activities you would like to include. Your list should have:
 - at least 10 activities, including food booths, games, and perhaps rides
 - a good variety that would appeal to a range of people in the community
 - a total cost that stays within the \$1000 limit

You will need to do a rough estimate of the costs. The table shows sample costs for some possible one-day rentals. Also, think about items that people might donate and costs for activities you can make, such as a ring toss.

Item	Rental Costs
Popcorn machine	\$60
Dunk tank	\$125
Inflatable moon walk	\$650

- Profit equals income (the money taken in) minus expenses. For each option, write an equation to find the profit y of selling x tickets. Assume that 200 people will attend and use \$1000 as your expenses.
- Graph the equations in the same coordinate plane. For which numbers of tickets sold are the two options equal? What is the profit or loss for this number of tickets?
- Use your graph to decide which option is better. *Explain* your reasoning. With the better option, how many tickets must be sold to pay for the activities?
- Conduct a survey to estimate how many people would attend and the average number of tickets each person would buy. How many tickets could you reasonably expect to sell?
- If your estimate for attendance is not 200, then revise your equations and graph the new equations. Would you still choose the same option? *Explain*.
- Use your estimates for attendance and ticket sales and your equations (the revised ones if necessary) to estimate the total income possible from the carnival. Would your carnival make a profit?

Present Your Results Write a report to your principal or student council recommending that your school offer or not offer a carnival. Present your activities and discuss why you think they meet the requirements. Show your estimates of income and profit or loss and how you reached them. Provide all supporting evidence including any equations, graphs, and survey data.