

6.A Money Matters

DISCOUNTS

A discount card at a movie theater costs \$10. With that card, it costs only \$3 to attend a movie, instead of \$5. The card is valid for three months.

1. Use the same pair of axes for both of the graphs in this problem. Make a graph of the *total cost* (including the cost of the discount card if you got one) as a function of the *number of movies* you see
 - a. if you have the discount card;
 - b. if you do not have the discount card.
2. What is the total cost of seeing n movies in three months
 - a. with the discount card?
 - b. without the discount card?
3.
 - a. If you saw 12 movies in three months, how much would you save by buying the discount card?
 - b. If you saw only two movies in three months, how much would you save by *not* buying the discount card?
4. **Report** Write a report explaining how you would decide whether or not to buy the card. Do a complete analysis of the situation, using graphs, tables, and equations. Your discussion should include, but not be limited to, answers to the following questions:
 - What is the break-even point; that is, how many movies would you have to see in order to spend exactly the same amount with and without the discount card?

- How would your decision be affected if the cost of the discount card were raised to \$12?
-  How would your decision be affected if the cost of the discount card were changed to \$ K ?

PAYMENTS

Today Lara opened a bank account and deposited \$700. She has just started a part-time job and will get a paycheck of \$130 every two weeks, on the 1st and the 15th of the month. She plans to take \$40 out of each paycheck for cash expenses and deposit the rest in her bank account. On the 15th of every month, when her car payment is due, she will write a check for \$220.

5. Make a table showing how much money Lara will have in her account on the 1st and 15th of every month over the next five months. It may help to show deposits and withdrawals. Look for a pattern.
6. How much money will Lara have in her account on the 1st and the 15th of the month
 - a. eight months after receiving her first paycheck?
 - b. n months after receiving her first paycheck?
7. **Report** Imagine that you are Lara's older sister or brother. Write a letter to her showing why she will run out of money, and when. Give her some suggestions for what she might do to avoid this.