Extending Concepts

Ordinary Interest In Exercises 21–24, use the information below.

You borrow \$4200 from a relative on January 5, 2012, to buy solar panels for your roof and windows with insulated glazing. The annual percentage rate is 8.9%. You agree to repay the loan on May 25, 2012.

21. Simple interest based on a 360-day year in which each month has 30 days is called *ordinary simple interest*. When using ordinary simple interest, you can use the formula below to find the number of days in a term from a month M, day D, and year Y to a later month m, day d, and year y. (Note: January = 1, February = 2, etc.)

Number of days =
$$360(y - Y) + 30(m - M) + (d - D)$$

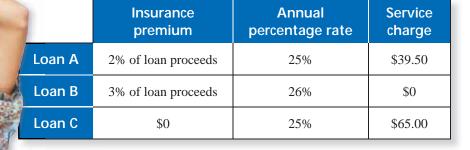
- **a.** Use the formula to find the number of days in the term.
- **b.** Find the total amount due using ordinary simple interest.
- **22.** What is the actual number of days in the term? Find the total amount due using exact simple interest, as on page 256.



- 23. Which type of interest costs you more money? Will this always be true? Explain.
- **24.** Do you think it is appropriate to use ordinary simple interest as an approximation of exact simple interest? Explain.



- **25.** Banker's Rule The Banker's Rule is another type of simple interest that is similar to ordinary simple interest. It is based on a 360-day year, but you use the actual number of days in the term when calculating interest. Does this benefit the lender or the borrower? Explain.
 - **26.** Loan Options You have 3 loan options for borrowing \$2500. You will repay the simple interest loan in 180 days.



- a. Find the interest for each loan.
- **b.** Find the annual percentage rate of each loan, including the service charge.
- c. Find the total amount due for each loan.
- **d.** Which loan would you choose? Explain.







Low-emissivity (Low-E) glazing on windows helps control heat transfer. These windows may cost 10%-15% more than traditional windows, but can reduce energy loss by 30%–50%.