

**LESSON  
1.1****Real-Life Application:  
When Will I Ever Use This?**

For use with the lesson "Evaluate Expressions"

**Class Officer Duties**

As class officers, one of the duties for you and your friends is to make sure your class has enough money for your five-year class reunion. You spend the year coming up with and holding various fund raisers. By the end of the year you have earned \$1250 in profit. A local bank offers you an incredibly good interest rate of 8% in a certificate of deposit.

The simple interest  $I$  earned by money  $P$  (called the *principal*) at an annual interest rate  $r$  for  $t$  years is given by  $I = Prt$ .

1. Using the simple interest formula from above, find the amount of interest that you will have earned by your five-year reunion by depositing the profit into the certificate of deposit. (*Hint*: You have three years left of high school to earn interest, too.) Be sure to show all work when evaluating the expression: write the expression, substitute the known values, and simplify.
2. What is the total amount of money that will be available for you and your classmates when you plan your five-year reunion? (*Explain* in words how you came up with your answer.)
3. When planning your five-year class reunion, you discover that the hall rental, catering, and door prizes will cost \$5000. You decide to charge each person \$12.50 to attend the reunion. How many people  $p$  will have to attend if you want all expenses to be covered without using any of the money in the certificate of deposit? Evaluate the expression

$$p = \frac{T}{c}$$

where  $c$  is the cost you will charge each person and  $T$  is the total amount of money that you need.

4. If you use the money from your certificate of deposit to help pay for the expenses, how many people will need to attend? (*Hint*: You will need to change your total amount in the formula you used in Exercise 3.)