1. Arturo deposits $3,000 into a savings account. At the end of the year, the bank pays him 4% interest, which amounts to $120. The total amount of money in his account is now $3,120. The next year, the bank will pay him 4% interest on $3,120, assuming he makes no deposits or withdrawals.

   a. Is the interest in the second year simple or compound interest? Why or why not?

   b. What is the principal in this situation?

   c. What is the annual yield?

   d. What is the total interest paid to Arturo at the end of the second year?

2. Name the following for the expression $-3x^5$.

   a. base

   b. power

   c. exponent

   d. coefficient

USES Objective D

3. a. Write an expression that you could use to find the amount in an account if $10,000 is invested at 6% annual yield for 10 years.

   b. Write an expression that you could use to find the amount in an account if $P$ dollars is invested at 6% annual yield for $t$ years.
4. A bank uses the spreadsheet below to show the amount in a savings account earning 4.5% interest annually. The principal invested is $2,100.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Year</td>
<td>Balance</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>2,100.00</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>2,194.50</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>2,293.25</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>2,396.45</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

a. **Multiple Choice.** Which expression does the bank use to calculate the balance in the savings account?

   A \(2,100(0.45)^t\)  
   B \(2,100(0.045)^t\)  
   C \(2,100(1.045)^t\)  
   D \(2,100(1.45)^t\)

b. What number should appear in cell B6?  

c. What number should appear in cell C6?  

d. What trend do you notice in the Annual Interest column?  

5. Most car-loan companies charge interest every month on your balance from the previous month. Suppose your balance is $15,720 and your monthly interest rate is 0.73%. How much interest will you pay that month?  

6. Suppose Shawna deposited $400 in a savings account that has an annual yield of 4.7%.

   a. How much money will Shawna have in her savings account at the end of 8 years?  

   b. How much interest will Shawna have earned?  

7. Which investment yields more? Explain your answer.

   a. an amount invested for 5 years at an annual yield of 3%.  

   b. the same amount invested for 2.5 years at an annual yield of 6%.