

So, it looks as though the more you compound an investment during the year, the better yields you will receive. I wonder if this is true all the time. Time to find out.

YOUR TURN

The scenario is that you have \$5000 to invest and you want to know which of the following investment situations will give you the most money at the end of 5 years. The interest rate for all of the situations is 6%.

1. Calculate the investment if it is compounded annually.
2. Calculate the investment if it is compounded semi-annually (twice a year).
3. Calculate the investment if it is compounded quarterly (four times a year).
4. Calculate the investment if it is compounded monthly (12 times a year).
5. Calculate the investment if it is compounded daily (365 times a year).
6. What did you discover? Which situation will give you the most? Which situation is the most realistic for banks? Which situation is the most realistic for credit card companies? Explain your reasoning.

Independent Practice with Compound Interest

Write a NOW-NEXT and explicit equation for each problem situation in order to find the solution.

- 1) An investment of \$75,000 increases at a rate of 12.5% per year. Find the value of the investment after 30 years. How much more would you have if the interest is compounded quarterly?
- 2) Suppose you invest \$5000 at an annual interest of 7%, compounded semi-annually. How much will you have in the account after 10 years? Determine how much more you would have if the interest were compounded monthly.
- 3) Lisa invested \$1000 into an account that pays 4% interest compounded monthly. If this account is for her newborn, how much will the account be worth on his 21st birthday, which is exactly 21 years from now?
- 4) Mr. Jackson wants to open up a savings account. He has looked at two different banks. Bank 1 is offering a rate of 5.5% compounded quarterly. Bank 2 is offering an account that has a rate of 8%, but is only compounded semi-annually. Mr. Jackson puts \$6,000 in an account and wants to take it out for his retirement in 10 years. Which bank will give him the most money back?
- 5) Mason deposited \$2,000 into a savings account that pay an annual interest rate of 9% compounded annually. Determine the amount of money in the savings account after 1 year, 5 years, 10 years and 20 years. Using the calculated values, construct a graph.