

Activity 1: Simple and Compound Interest—Answer Key

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1-4. Find the simple interest to the nearest cent.

1. \$350 at 7.5% for 3 years 1. \$78.75

2. \$700 at 18% for 6 months 2. \$63

3. Sander invested \$155 at 10% simple interest. What is the total amount of money after 2 years? 3. \$186

4. Brandon borrowed \$875 at 5% simple interest for 5 years. What is the total amount he must repay? 4. \$1093.75

5-8. Find the balance of the account earning compound interest annually.

5. \$7000 at 2% for 4 years. 5. \$7577.03

6. \$7000 at 4% for 2 years. 6. \$7571.20

7. Mark deposits \$2000 into an account that pays an interest rate of 3.5% compounded annually. He doesn't add or remove money from his account for 4 years. How much money will Mark have in 4 years? **\$2295.05**

8. You deposit \$1500 into an account that pays an interest rate of 4% compounded annually. Your friend deposits \$1500 into an account that pays a simple annual interest rate of 4%. Compare the balances of the two accounts after 5 years.

**I would have \$1824.98 and my friend would have \$1800. I would have accumulated \$24.98 more money with compounded interest than my friend did with simple interest.**

9. Write 3 sentences explaining the benefits of starting to save at a young age, saving regularly, the benefits of higher interest rates, and the benefits of compounding more frequently.

**If I started saving at an early age I would have more time to grow my money. If I invest my money at a higher interest rate, then my return would also be higher. The benefit of compounding more frequently allows for me to earn interest more frequently, which allows my money to grow faster than if it is compounded less frequently.**

Having a credit card is like having a loan. The credit card company lends you money on a monthly period. If your monthly bill is not paid in full, you are charged interest on the unpaid balance and interest on any interest you may already own. Credit card companies use a compound interest formula. They do not compound interest annually, they compound interest much more frequently (e.g., daily). The formula used is the same as the formula for determine compound interest on a saving account-  $A = P(1 + r)^t$ , but  $r$  is a *daily* interest rate and  $t$  is time in *days*.

10. Let's say that you have a credit card with XYZ Credit Card Company and XYZ charges an 18% annual interest rate on unpaid balances compounded monthly. Although most people usually make at least minimum payments and others pay their balances in full, in this case assume no payments were made.

- a. What is the monthly interest rate? **1.5% or 0.015**
- b. \$1,234 was charged to the credit card. What is the balance on the card after:
  - i. One month? **\$1252.51**
  - ii. Six months? **\$1349.31**
  - iii. One year? **\$1475.39**

Remember, you originally spent \$1,234 dollars on goods and services you wanted. However, if you don't pay off the balance at the end of the month you will pay much more.