Name _____ Date _____

Real World Math Period _____

Unit 7 Project
Online Financial Calculators

due by the start of class on Thursday, May 26th

You will lose 10 points per day it is late

Go to the following website:

www.practicalmoneyskills.com/resources/financial_calculators

(Note: there is an underscore between financial and calculators)

Part I: Savings & Investment

Choose the link for the financial calculator called **"Save a Million"**

1. Choose a savings goal for yourself and answer the other questions on the **"Save a million"** financial calculator:

Your savings goal in dollars (do not use $1,000,000)	
Your age now	
Age when you want to reach your goal	
How much money do you currently have saved?	
How much are you depositing on a regular basis?	
How frequently are you contributing to your savings?	Monthly
What annual interest rate do you expect on your account?	4%

2. Record the results from your savings goal:
   a. Will you reach your savings goal?

   b. How long will it actually take you?

   c. How much would you have to invest each month to reach your goal in exactly five years?

d. How long would it take you to save 1 million dollars?

e. If you wanted to save a million dollars in five years, how much would you have to invest each month?

f. What was the savings tip they gave you?

3. Your savings goal is $10,000 in 5 years. You have $1,000 saved already. You plan to deposit $200 per month in an account with an interest rate of 3.5%.

   a. Will you reach your savings goal?

   b. How long will it actually take you?

   c. How much would you have to invest each month to reach your goal in exactly five years?

   d. How long would it take you to save 1 million dollars?

   e. If you wanted to save a million dollars in five years, how much would you have to invest each month?

Choose the link for the financial calculator called **"Do I Have Enough Retirement Money"**

4. Answer the questions on the **"Do I Have Enough Retirement Money?"** financial calculator:

Your age now	
Age you would like to retire (typically between 55 and 65)	
How long would you like your retirement money to last? (assume you will live to 90 years old) = 90 – age you would like to retire	
How much money will you need each year when you retire? (this is difficult to answer as it will depend on your pension, social security, inflation, and your lifestyle when you retire)	Assume $50,000
How much do you currently have saved for retirement?	$0
How much can you deposit annually (per year) into your retirement account? (Choose this based on a future job you plan to have)	
What annual interest rate do you plan to make on your retirement investments?	5%

5. Record the results from the **"Do I Have Enough Retirement Money?"** financial calculator:
   a. How much will you actually have each year when you retire?

   b. How much would you have had to invest each year to have the $50,000 you wanted?

6. Now start a new retirement calculation.
   - Keep all of the other information the same, but retire when you are **five years older** than the first calculation.

- This means that your retirement money will need to last **five years less** (for example if you entered 30 the first time, enter 25 now), so make this change as well.

Your age now	
Age you would like to retire (5 years more than the table from question 4)	
How long would you like your retirement money to last? (5 years less than the table from question 4)	
How much money will you need each year when you retire?	Assume $50,000
How much do you currently have saved for retirement?	$0
How much can you deposit annually (per year) into your retirement account? (same as the table from question 4)	
What annual interest rate do you plan to make on your retirement investments?	5%

7. Record the results from the **"Do I Have Enough Retirement Money?"** financial calculator:
   a. With this new calculation, how much will you actually have each year when you retire?

   b. How much would you have had to invest each year to have the $50,000 you wanted?

   c. How did these numbers change when you decided to work five years longer. Give two reasons for the change.

8. Use the **"Do I Have Enough Retirement Money?"** financial calculator again. Enter the following information and record the results:

   Assume you are 22 now and plan to retire at the age of 60. You want your money to last you until you are 90 years old. Since you will receive a pension, you estimated that you will need an extra $32,000 a year. Since you are so young, you currently do not have any money saved for retirement. You plan to invest $2,500 a year into investments that get you 5.25% APR.

   a. How much will your annual retirement income be?

   b. To reach your preferred level of income, how much will you need to invest each year?

Part II: Loans

Choose the link for the financial calculator called "**Cost of Credit"**

9. You owe $5,000 on your credit card which has an 17% APR. You are planning to pay off $100 a month.

   a. How long will it take you to pay it off if you pay $100 a month?

   b. What is the final month's payment amount?

   c. What would be the total finance charge?

   d. What would be the true cost of the $5,000 on your credit card?

   e. In order to reduce the true cost of your purchases, what advice to they give you about credit cards?

10. Use the "**Cost of Credit"** financial calculator again to enter the following: Assume you are making a $1000 purchase on a credit card that charges a 20% Apr. Complete the following table using the monthly payments and keeping the $1000 and 20% the same:

Monthly Payment	# of months to pay off	Total Finance Charge	True Cost of the Purchase ($1000 + finance Charge)
$20			
$40			
$100			
$500			

a. Does the difference between the total cost when you pay $20 per month and the total cost when you pay $40 per month surprise you? Why is the finance charge more than double if you make a $20 payment instead of a $40 payment?

Choose the link for the financial calculator called **"How Much Will My Loan Cost"**

11. You found a house on the market for $190,000. The bank offers you a 30-year mortgage with 6.4% interest.

a. What is the length of the loan in months?
(years x 12) =

b. What would the monthly payments be?

c. How much interest would you pay?

d. What would be the total cost of the mortgage?

12. Use the **"How Much Will My Loan Cost"** financial calculator to enter the following situations. Each situation is slightly different from the first. The difference is underlined.

    1. You are buying your first house and you have to take out a $200,000 mortgage with 6% APR for 30 years (360 months).
    2. You are buying your first house and you have to take out a $200,000 mortgage with 6% APR for **15 years (180 months).**
    3. You are buying your first house and you have saved up $100,000 as a down payment. Therefore you only have to take out a **$100,000 mortgage** with 6% APR for 30 years. (Note: At the end, you will see that you have to add the down payment to what the calculator gives you in order to find the total payment.)
    4. You are buying your first house and you have to take out a $200,000 mortgage with **3% APR** for 30 years (360 months).

- After entering each of the following situations into the calculator, record the results below.

	(1)	(2)	(3)	(4)
Loan Amount	$200,000	$200,000	$100,000	$200,000
Loan Annual Percentage Rate (APR)				
Length of Loan in Months				
Results:				
Monthly Payment				
Total Finance Charge				
Total Payment Amount			_____ + $100,000 =	

Answer each of the following questions based upon the mortgage activity on the previous page (question 12):

a. Cutting the Years in Half:

Compare situation (1) with situation (2).

a) **How much** did the monthly payments change (give a number)?

b) **How much** did the finance charge change?

c) **How much** did the total payment change?

b. Cutting the Mortgage Size in Half:

Compare situation (1) with situation (3).

a) **How much** did the monthly payments change?

b) **How much** did the finance charge change?

c) **How much** did the total payment change?

c. Cutting the Interest in Half:

Compare situation (1) with situation (4).

a) **How much** did the monthly payments change?

b) **How much** did the finance charge change?

c) **How much** did the total payment change?

d. Using your answers to questions 1-3, decide which variable: <u>years</u>, <u>mortgage size</u>, or <u>interest</u>, made the BIGGEST difference in the

a) Monthly Payments:

b) Finance Charge:

c) Total Payment: