

Mr. Mitchell's Excel and Exponents Assignment:

1. Your Name/Saving the File

- Enter your first name in cell b1.
- Enter your last name in b2.
- Enter your period in cell b3.
- Save your file project1lastnamefirstname.xlsx
 - For example, Mike Smith would save his file as project1SmithMike.xlsx

	A	B	C
1	First Name:	Mister	
2	Last Name:	Mitchell	
3	Period	1,3,6 or 8	
4			
5			
6			

2. Creating a Formula and Extending it Down a Column

- Create a cell titled "Day"
- in the cell just below this, enter the number 1.
- in the cell below the 1, enter =1+ and select the cell where you entered 1. This will add one to that cell (giving you 2). Hit the enter button to complete the formula.
- Left-click this cell to select it again. Then use the mouse to put the cursor over the lower left hand corner of the cell you just entered the formula in. You should see the mouse become a small black cross. Left-click the mouse and drag the mouse down. This will extend your formula and should give you a list "1,2,3,4,5,6,..."

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F
1	First Name:	Mister				
2	Last Name:	Mitchell				
3	Period	1,3,6 or 8				
4						
5				Day		
6				1		
7				=1+D6		
8						
9						
10						
11						
12						

The formula bar at the top shows the formula =1+D6. A small black cross (fill handle) is visible at the bottom-left corner of cell D7, indicating that the formula is being extended down the column.

3. The Value of a Penny After Doubling Every Day for 30 Days

- Select the cell to the right of the "Day" cell and name it "Value".
- Below your new "value" cell enter 0.01. In other words, day 1 should have a value of 0.01.
- Create a formula below this that doubles the value of the "0.01" cell.
- Extend this formula to show how much the penny would be worth after each day, for 30 days.

	A	B	C	D	E
1	First Name	Mister			
2	Last Name:	Mitchell			
3	Period	1,3,6 or 8			
4					
5					
6				Day	Value
7				1	0.01
8				2	0.02
9				3	0.04
10				4	0.08
11				5	0.16
12				6	0.32
13				7	0.64
14				8	1.28
15				9	2.56
16				10	5.12
17				11	10.24
18				12	20.48
19				13	40.96
20				14	81.92
21				15	163.84
22				16	327.68
23				17	655.36

4. Repaying a \$10,000 loan that accumulates 6% interest per year ($\approx 0.5\%$ per month)

G	H	I	J	K	L
		Current		Interest	New
	Month	Loan Amount	Payment	Accumulated	Loan Amount
	0	10000	400	50	9650
	1	9650	400	48.25	9298.25

- a. In a new column, create a cell titled "Month".
 - i. Create a list numbered 0-60 (5 years) below the month header.
- b. Title the next Column "Current Amount Owed".
 - i. Enter 10,000 under the "Current Amount Owed" column for month 0.
- c. Title the next Column "Payment"
 - i. Enter 400 under the "Payment" column for month 0.
 - ii. Extend this cell downwards so that you **continue paying \$400 each month**.
- d. Title the next Column "Interest Accumulated"
 - i. Create a formula that calculates **0.5%** interest from the current amount owed. (6% interest per year divided by 12 months is approximately **0.5% per month**. Interest is often compounded continuously which is more complicated than this but not to worry for now.)
- e. Title the last Column "New Loan Amount"
 - i. Create a formula that calculates the new amount owed. This should take the previous loan amount, add the interest that also accumulated and deduct the payment made.
- f. Use a formula to make the current loan amount for month 1 equal to the new loan amount from the end of month 0.
- g. Extend your formulas!
 - i. Extend the interest accumulated formula to month 60.
 - ii. Extend the new loan amount formula to month 60.
 - iii. Extend the current loan amount formula to month 60.

5. Analysis of Loan:

- a. Create a word document to answer the following questions.
- b. Title your file LoanRepaymentLastNameFirstName.docx
(For example: LoanRepaymentMitchellMister.docx)
- c. How long does it take to pay off this loan?
- d. Adjust the payments.
 - i. How long would it take to pay off the loan if you pay \$300 per month?
 - ii. How long would it take to pay off the loan if you pay \$200 per month?
- e. Adjust the loan amount.
 - i. Set the payments back to \$400 per month.
 - ii. Change the original loan amount to \$15,000. How long does it take to pay this larger loan off at \$400 per month?
 - iii. Change the original loan to \$25,000. How long does it take to pay this even larger loan off at \$400 per month?
- f. Continue playing around with different loan amounts and different monthly payments.
 - i. State at least 3 general observations.