Name _____ which class? M 12 & T/Th 11-12:15 OR M 4 & T/Th 3:30-4:45

Doubling Money at Today's Rate: An Introduction to Excel
Dr. Sarah's MAT 1010/WRC 1010: Introduction to Mathematics

Microsoft Excel is an electronic spreadsheet program that we'll use to algebraically manipulate and analyze data and create visualizations.

goals for this lab:
- Explore applications of algebra in everyday life.
- Utilize technology to adapt and use mathematical formulas that include cell referencing to answer real-world questions and interpret results.
- Communicate quantitative information in written documents.

I'll make my way around the room to help and check your work. If you are stuck in the meantime, ask a neighbor.
- Open up Excel
- Open up a Blank Workbook.
- In A1 type
  total savings
- In B1 type
  months
- In C1 type
  years
- in C2 type
  =B2/12
  which will convert months to years. When you hit return it will show 0 to start. If it doesn't show that, don't forget the equals sign that always comes before Excel equations!
- Search for today's rate for a savings account at a bank, your own accounts, or other financial institutions. Careful about whether they say "compounding monthly at..." or an "annual rate" or "APY" (annual percentage rate), which are all yearly rates, or give some other language like "monthly rate" or "periodic rate," which is a monthly rate. Write the source and rate info:

  source:

  rate as a percentage _____ **circle one**:   yearly rate   monthly rate
- To write the monthly rate as a decimal

  - If your rate was a yearly rate then convert it to a decimal and write it as rate/12, like $\dfrac{.02}{12}$ for 2% APY:

    OR

  - If your rate was a monthly rate then just convert it to a decimal:

- The lump sum formula is total = principal $(1+ \text{ periodic rate})^{\#\text{times compounding}}$. **We will see WHY tomorrow!** To find out how much time it takes to double \$1000.00 compounded monthly, fill in the blank with your rate as a decimal from the last question:

  $2000 = 1000(1 + \underline{\hspace{2cm}})^?$

- Fill in the rate as a decimal in the corresponding Excel formula:

  =1000*(1+ \underline{\hspace{2cm}}) ^ B2

- To solve for the required time, in A2 in Excel type the formula exactly as you see it in the last question.

- Hit return, make sure you see 1000, and then click back on A2.

- We want Excel to solve for time it will take so find Goal Seek in your Excel program. It may be under Data/What-If Analysis/Goal Seek or Tools/Goal Seek (or elsewhere).

- In the Goal Seek box,

  Set cell: should already read A2

  To value: Put 2000 in the to value slot, which is the doubled money.

  By changing cell: Type B2 in the changing cell box to have Excel change the months and hit OK. Goal Seek will find a solution, so then click on OK.

- On the front board, write the rate you found, whether it was a monthly rate or yearly rate, and how many years it takes to double your money.

- Show me your Excel work as I make my way around the room. I should have time to get around to see it.

- Next, if there is time before we come back together and I collect this lab, go to our ASULearn course and start getting acclimated with it. You can choose something to work on there, like What is Mathematics or Percent Practice that are due tomorrow. If you need additional time, you can turn in the lab at the start of class tomorrow rather than today.