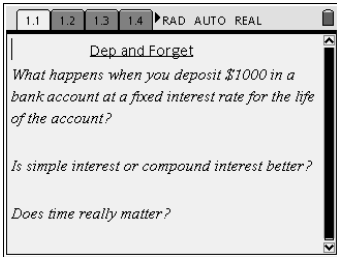


Name: _____ Date: _____

In this activity you are going to utilize the functions of the handheld TI-Nspire™ calculator. Open up the Interest-compare.tns file by pressing the **C** key. Select 6:MY DOCUMENTS, scroll to the file, and press **•**. Figure 1 shows what the Interest-compare.tns file looks like when it is open on your TI-Nspire™ handheld.



Initial Problem: Thinking it through

Q1: Read the opening screen and make a conjecture based upon the first page of problem one. (1.1)

Q2: What tools/methods/technologies could you use to make such a comparison?

Problem #1.2: Calculations

1. Move to page 2 of problem 1 and insert a value for the rate. This value should be an integral value between zero and ten with at most two decimal places. (Hint: I used 6.2)

Rate = _____

2. / **e** to move to the calculator screen and perform the indicated calculations.

Problem #1.3: Setting up for the visual

3. Move to page 3 of problem 1. Consider what data would go in columns A and B. Label your columns accordingly using one letter abbreviations where able.

Column A = _____ = _____

Column B = _____ = _____

4. Place your data from 1.2 into the spreadsheet.

Q3: Do you see a pattern? Describe the pattern in terms of the variables used.

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Q4: Develop a rule for the pattern. If you do not see the pattern/rule, speak with your neighbor.

5. Move to cell A4 and use the excel commands to create a formula to obtain the new value for this cell. Do not forget to type “=” to let the handheld know you are typing a formula. Move to cell B4 and do the same.

A4 rule = _____

B4 rule = _____

6. Repeat this process for two more rows. Don't forget that you can copy and paste to repeat the formulas.

Using the Fill down function...

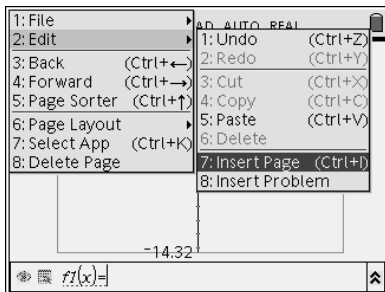
- ✓ Move up using the NavPad cursor control until A1 is boxed in.
- ✓ Press the **g** at the same time. This will highlight the first two cells in the A column.
- ✓ Press **b 3: Data** and **3: Fill Down**
- ✓ Move down using the NavPad until the highlighted border is in cell A10.
- ✓ Press the **•** to fill the column.
- ✓ Repeat for column B

Problem #1.4: A visual

7. Use page 1.4 to create a visual of the data. Don't forget to use Zoom-Stat to get a better view of the data.

Q5: Comment on the nature of your visual. Be sure to include the context of the problem.

8. Insert a new calculator page and perform an appropriate regression. Graph the new function. Press **/C**, **2: EDIT**, and **7: Insert Page**.



Q6: Write your equation. Comment on the fit your equation. _____

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Problem #2.1: Compound Interest

9. Move to the next problem and repeat the process above for a compound interest situation. Be sure to keep the rate the same. Answer the following questions based on your discoveries.

Use the same single variables but place a c before it so that you will recognize it later.

Column A = _____ = _____

Column B = _____ = _____

Q7: Do you see a pattern? Describe the pattern in terms of the variables used.

Q8: Develop a rule for the pattern. If you do not see the pattern/rule, speak with your neighbor.

A4 rule = _____

B4 rule = _____

Q9: Comment on the nature of your visual. Be sure to include the context of the problem.

Q10: Write your equation. Comment on the fit your equation.

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Problem#3: Putting it together

Move to problem #3 and copy in your simple interest function into $f(1)$ and your compound interest function into $f(2)$. Graph both and respond to the initial problems. Was your conjecture correct? Did the tools of the handheld assist you in analyzing the situation? Explain and be sure to write in context.

Screen Shots

The screenshots show a sequence of steps in a math software interface:

- Top Left:** A text prompt titled "Dep and Forget" asking: "What happens when you deposit \$1000 in a bank account at a fixed interest rate for the life of the account?" and "Is simple interest or compound interest better?"
- Top Right:** A text prompt: "You are going to deposit \$1000 into a simple interest bank account at a fixed rate of r%. Calculate the balance for three different years."
- Middle Left:** A text prompt: "Use your previous calculations to create a spreadsheet." Next to it is a spreadsheet with columns labeled A, B, C, D and rows 1 through 5.
- Middle Right:** A coordinate plane with x and y axes. The x-axis has tick marks at -20, 2, and 20. The y-axis has tick marks at -14.32, 2, and 12.44.
- Bottom Left:** A text prompt: "You are going to deposit \$1000 into a compound interest bank account at a fixed rate of r%. Calculate the balance for three different years."
- Bottom Middle:** A text prompt: "Use your previous calculations to create a spreadsheet." Next to it is a spreadsheet with columns labeled A, B, C, D and rows 1 through 5.
- Bottom Right:** A coordinate plane with x and y axes, identical to the one in the middle right.