Directions: Please answer the following questions and make sure your answer are legible. If you don’t show work and/or I can’t follow it, I won’t give partial credit. You may use a calculator (not the calculator function on other technology) and the Formula Sheet that I provide you, nothing else. Good Luck.

This quiz is optional. It is take home, and Open Book, Open Note, Open Internet. If you choose to take it, it will replace your worst quiz grade (It can’t hurt your grade). There are 2 people in the universe you may talk to about this quiz: Dr. Jackie Kaminski, and an optional partner from this class. If you choose to talk with a partner, you must each turn in your own quiz.

To be graded you must return your quiz to 265 Hawthorn by Friday at 3:59pm.

1. (3 points) Sasha deposited $5,000 into a 5 year CD paying 4.21% compounded monthly. How much more interest would she earn if she found a 5 year CD with the same rate compounded continuously?

\[
\begin{align*}
\text{Comp. Monthly} & \\
FV &= 5000 \left(1 + \frac{0.0421}{12}\right)^{60} \\
FV &= 6169.20 \\
\text{Comp. Cont.} & \\
FV &= e^{(0.0421 \times 5)} \\
FV &= 6171.49
\end{align*}
\]

\[\$6171.49 \text{ (contin)} - 6169.20 \text{ (monthly)} = \$2.29\]

2. (5 points) A Surf Shop makes a monthly profit of $5,000 in July. Because the weather is getting colder, they expect their monthly profits to decrease by 3% each month for the next 8 months.

(a) What is their monthly profit in August? \[\$4850\]

(b) What is their monthly profit in February? \[\$4039.91\]

(c) What are their total profits for the months of July through February?

\[
\begin{align*}
\text{Partial sum add up first 8 months on last@left!} \\
S_f &= \frac{5000(1-.97^8)}{1-.97} \\
S_f &= \$36,042.77 \\
\text{You should NOT write at a whole table for this question!}
\end{align*}
\]
3. (2 points) Michelle has $3,000 to put in an investment account that pays 2.03% interest compounded every minute. Approximately how long will it take for her account to reach $6,000?

\[
\text{Doubling Time} \approx \frac{72}{2.03} = 35.46798\ldots
\]

\[
\text{or you could have rounded to the nearest year } \& \text{ said } 35 \text{ years.}
\]

4. (5 points) You found the following options for CD’s to deposit your Money into:

<table>
<thead>
<tr>
<th>Bank</th>
<th>(nominal) Rate</th>
<th>Compounding</th>
<th>APY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malia Credit Union</td>
<td>6.19%</td>
<td>Annually</td>
<td>6.19%</td>
</tr>
<tr>
<td>Barack Bank</td>
<td>6.08%</td>
<td>Monthly</td>
<td>6.35%</td>
</tr>
<tr>
<td>Oval Savings &amp; Loan</td>
<td>6.03%</td>
<td>Daily</td>
<td>6.21%</td>
</tr>
</tbody>
</table>

Complete the table above, and explain which option you would choose to deposit your money into and why. Reasons why must be based on sound, mathematically correct, reasoning.

\[
\text{MCU} \quad 100 (1 + .0619/1)^1 = 106.19
\]

\[
\text{BB} \quad 100 (1 + .0608/12)^{12} = 106.25
\]

\[
\text{OSL} \quad 100 (1 + .0603/365)^{365} = 106.21
\]

\[
\text{MC} \quad (1 + .0619/1)^1 - 1 = .0619
\]

\[
\text{BB} \quad (1 + .0608/12)^{12} - 1 = .0625
\]

\[
\text{OSL} \quad (1 + .0603/365)^{365} - 1 = .0621
\]

5. (0 points) You must sign the appropriate part for this quiz to be graded

- I __________________________ certify that the only person I talked to (in person or with the help of technology) about this quiz was Dr. Jackie Kaminski (Or I talked to no one).

  signature __________________________ date ______

- I __________________________ certify that the only people I talked to (in person or with the help of technology) about this quiz were __________________________ (partner) (and maybe Dr. Jackie Kaminski)

  signature __________________________ date ______

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