This quiz is due on Tuesday, March 2 at 2 pm. Place the quiz in my mailbox, which is labeled with my name and the number 26, and is found in the hallway outside of the MSCS office, CU340.

When a box is given, you are expected to set up the problem as shown in class and to place your labeled answer in the answer box. Answers that are

- percentages, should be written as percentages with three significant digits to the right of the decimal point (e.g. 4.036%),
- monetary should be rounded to the nearest cent
- time should be rounded to two places to the right of the decimal point and labeled with the correct unit of time.

Q1: To complete the sale of a house, the seller accepts, from the buyer, a 180-day note for $10,000 at 7% simple interest. This means that both principal and interest will be repaid in 180 days. Because the seller wants to use the money to purchase another house, he sells the note to a third party for $10,125 after 60 days.

A. How much does the buyer of the house owe when the note is due after 180 days?

\[ A = 10,000 \left(1 + \frac{.07}{360} \right) \]
\[ = 10,350 \]

B. What annual rate of interest will the third party receive for his investment when the note is repaid?

\[ A = P \left(1 + \frac{r \cdot t}{360} \right) \]
\[ 10,350 = 10,125 \left(1 + \frac{r \cdot 180}{360} \right) \]

Q2: What is the APY (Annual Percentage Yield) for money invested at

A. 12.2% compounded daily?

\[ E = .129731 \]
\[ R = .122 \]
\[ M = 365 \]

Answer: 12.973%
**Q3:** An investment company pays 8% compounded monthly. How much should you deposit now to have $8,000 in 5 years?

<table>
<thead>
<tr>
<th>Formula</th>
<th>C.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ A = 8000$</td>
<td></td>
</tr>
<tr>
<td>$ P = 5.369.4835$</td>
<td></td>
</tr>
<tr>
<td>$ I = .08/12 = .0067$</td>
<td></td>
</tr>
<tr>
<td>$ N = 5.12 = 60$</td>
<td></td>
</tr>
</tbody>
</table>

Answer: $5369.48$

**Q4:** If $1$ is placed in an account in the year 1100 and forgotten until now, how much would be in the account at the end of 2010 if the money earned

<table>
<thead>
<tr>
<th>A. 2% simple interest</th>
<th>B. 2% compounded annually</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>S.I.</td>
</tr>
<tr>
<td>$ A = 19.20$</td>
<td></td>
</tr>
<tr>
<td>$ P = 1$</td>
<td></td>
</tr>
<tr>
<td>$ R = .02$</td>
<td></td>
</tr>
<tr>
<td>$ T = 2010-1100 = 910$</td>
<td></td>
</tr>
<tr>
<td>Answer</td>
<td>$19.20$</td>
</tr>
</tbody>
</table>

**Q5:** If the world population is now 6.5 billion people and is growing at 1.14% compounded continuously, how long will it take the population to grow to 10 billion people?

<table>
<thead>
<tr>
<th>Formula</th>
<th>C.C.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ A = 10$</td>
<td></td>
</tr>
<tr>
<td>$ P = .5$</td>
<td></td>
</tr>
<tr>
<td>$ R = .0114$</td>
<td></td>
</tr>
<tr>
<td>$ T = 37.7879$</td>
<td></td>
</tr>
</tbody>
</table>

Answer: 37.79 years
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B. What annual rate of interest will the third party receive for his investment when the note is repayed?

Q2: What is the APY (Annual Percentage Yield) for money invested at
A. 12.2% compounded daily?  B. 9% compounded continuously?

Formula _____________

Answer

Formula _____________

Answer
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Formula ________________

Answer

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Formula ________________

Answer

B. 2% compounded annually

Formula ________________

Answer

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Formula ________________

Answer