1) Larger Investment: \( P = \#65,000 \), \( r = 3.40\% = 0.034 \), \( t = \frac{270}{365} \)
\[
I = Prt = \#65000 \times 0.034 \times \frac{270}{365} = \#16.34.79
\]

Smaller Investment: \( P = \#32,500 \), \( r = 3.10\% = 0.031 \), \( t = \frac{270}{365} \)
\[
I = Prt = \#32500 \times 0.031 \times \frac{270}{365} = \#1490.55
\]

Difference: \( \#16.34.79 - \#1490.55 = \#144.24 \)

2) S = Treasury Bill: \( S = \#20,000 \), \( r = 2.67\% = 0.02678 \), \( t = \frac{91}{365} \)
\[
P = \frac{S}{1 + rt} = \frac{\#20,000}{1 + 0.02678 \times \frac{91}{365}} = \#19,867.35 \]

3) Purchase Date: \( S = \#50,000 \), \( r = 4.1\% = 0.041 \), \( t = \frac{182}{365} \)
\[
P = \frac{S}{1 + rt} = \frac{\#50,000}{1 + 0.041 \times \frac{182}{365}} = \#48,926.52
\]

Sale Date: \( S = \#50,000 \), \( r = 4.1\% = 0.041 \), \( t = 182 - 30 = \frac{152}{365} \)
\[
P = \frac{S}{1 + rt} = \frac{\#50,000}{1 + 0.041 \times \frac{152}{365}} = \#49,160.63
\]

Earnings = Sale Price - Purchase Price = \#49,160.63 - \#48,926.52 = \#234.07
4) Commercial Paper Certificate: $S = $100,000 \ r = \frac{90}{365} \ P = $99,250

Solve for r

1. \ t = S - P = $100,000 - $99,250 = $750

Now, solve for r

2. \ r = \frac{\frac{750}{365}}{\frac{90}{365}} = 7.88\% \times 100 = 3.064651553 = 3.065\%


\ t = \frac{16}{365}

\ I = \frac{P \times t \times \frac{365}{365}}{100}

\ P = $2000 \ r = 0.038 \ t = \frac{16}{365}

\ I = P \ r \ t = \frac{$2000 \times 0.038 \times 16}{365} = $3.33

Aug. 28 = $3.33

Sept. 20 - Sept. 28, 2000

\ P = $1500 \ r = 0.038 \ t = \frac{28 - 20}{365}

\ I = P \ r \ t = \frac{$1500 \times 0.038 \times 8}{365} = $1.25

Sept. 28 = $1.25 + $4.78 = $6.03
6) Aug 5 - Aug 28
[\[ t = \frac{23}{365} \]

Aug 28
[\[ t = \frac{31}{365} \]

Sept 28

---

<table>
<thead>
<tr>
<th>Payment of</th>
<th>$700 PRN = $665.72</th>
</tr>
</thead>
<tbody>
<tr>
<td>INT = $34.28</td>
<td></td>
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</tbody>
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---

1. August 5 - August 28

\[ \begin{align*} 
\text{P} &= $17000 \quad \text{r} = 0.032 \quad t = \frac{23}{365} \\
\text{I} &= P \cdot r \cdot t = 17000 \times 0.032 \times \frac{23}{365} = 134.28 \\
\text{Principal Reduction} &= 700 - 134.28 = 665.72 
\end{align*} \]

2. August 28 - September 28

In a demand loan, when making the 2nd or soon payment we need to update the Principal Balance before calculating the interest. This is because each payment you make some of money goes towards the principal and some goes towards interest.

So, \[ \begin{align*} 
\text{P} &= $16334.28 \quad \text{r} = 0.032 \quad t = \frac{31}{365} \\
\text{I} &= P \cdot r \cdot t = 16334.28 \times 0.032 \times \frac{31}{365} = 44.39 \\
\text{Principal Reduction} &= 700 - 44.39 = 655.61 
\end{align*} \]