1. Lease - 5 Years at $500/month payable at the "beginning" of each month. Use 9.75% compounded Monthly. Find PV.

\[ N \times 12 = 60 \]
\[ I \times 9.75\% \]
\[ PV = ? \]
\[ PMT = 500 \]
\[ FV = 0 \]
\[ P/Y 12 \]
\[ C/Y 12 \]

Purchase the car for $28,000 today and sell it for $5,000 in 5 years. Find the PV of $5,000 and subtract that away from the $28,000 to find the cost of the car. Calculate in any mode BGN or END as there are no PMT's in the calculation.

\[ N \times 12 = 60 \]
\[ I \times 9.75\% \]
\[ PV = 30,768.5 \]
\[ 28,000 - 30,768.5 = \]
\[ PMT = \]
\[ FV = -5000 \]
\[ P/Y 12 \]
\[ C/Y 12 \]

Savings = $24,923.15 - $23,861.80 = $1061.35

You should lease the car. You would save $1061.35.
Business Math: Chapter 16 Answer Key
by Michael Reimer

2. Today 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash Flow (CF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-150,000</td>
</tr>
<tr>
<td>1</td>
<td>-150,000</td>
</tr>
<tr>
<td>2</td>
<td>+$125,000</td>
</tr>
<tr>
<td>3</td>
<td>+$125,000</td>
</tr>
<tr>
<td>4</td>
<td>+$125,000</td>
</tr>
<tr>
<td>5</td>
<td>+$125,000</td>
</tr>
</tbody>
</table>

Always go \[ {\text{2nd}} \] [CE/C] every time you use the CF function.

\( \text{CF0} \): \$250,000 \( \text{Enter} \) \( \downarrow \)
\( \text{CF1} \): \$150,000 \( \text{Enter} \) \( \downarrow \)
\( \text{F0} \): \( \text{1} \) \( \text{Enter} \) \( \downarrow \)
\( \text{F0} \): \$125,000 \( \text{Enter} \) \( \downarrow \)
\( \text{F0} \): \$125,000 \( \text{Enter} \) \( \downarrow \)

\( \text{NPV} \): \[ \text{15\% Enter} \] \( \downarrow \)
\( \text{NPV} \): \#16,070.10

\( \text{NPV} \): \#16,070.10

If your NPV is a 0 or positive answer, say "Yes" to the investment.
If your NPV is a negative answer, say "No" to the investment.

No, we would lose \$16,070.10 on this investment in present dollars.

3. Change \( \text{I} \) from 15\% to 10\%.
\( \text{NPV} \): \( \text{I 10 Enter} \) \( \downarrow \)
\( \text{NPV} \): \#44,407.59

Yes, we would gain \$44,407.59 in present dollars on this investment.
Business Math: Chapter 16 Answer Key
by Michael Reimer

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF</td>
<td>$1,000,000</td>
<td>$1,000,000</td>
<td>$1,000,000</td>
<td>$1,000,000</td>
<td>$1,000,000</td>
<td>$1,000,000</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

3 Year 4 Year 5 Year 6 Year 7 Year

<table>
<thead>
<tr>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,000,000</td>
<td>$1,000,000</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

Le work + $200,000 (3 (1))

CF 2nd LE/L

<table>
<thead>
<tr>
<th>CF</th>
<th>$2,000,000</th>
<th>Enter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>$-300,000</td>
<td>Enter</td>
<td></td>
</tr>
<tr>
<td>FO1</td>
<td>1</td>
<td>Enter</td>
<td></td>
</tr>
<tr>
<td>FO2</td>
<td>9</td>
<td>Enter</td>
<td></td>
</tr>
<tr>
<td>FO3</td>
<td>1</td>
<td>Enter</td>
<td></td>
</tr>
</tbody>
</table>

NPV \( t = 15\% \) Enter | \[ \text{NPV} \text{(PV)} = \$413,337.08 \]

Yes, we would gain \$413,337.08 in present dollars on this investment.
Business Math: Chapter 16: Answer Key

by Michael Reiner

Today 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7 Year

<table>
<thead>
<tr>
<th>(C0)</th>
<th>(C01C1)</th>
<th>(C02C2)</th>
<th>(C03C3)</th>
<th>(C05C5)</th>
<th>(C12C12)</th>
<th>(C13C13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-$15000</td>
<td>-$30000</td>
<td>-$10000</td>
<td>$0</td>
<td>-$40000</td>
<td>+$70000</td>
<td>+$70000</td>
</tr>
</tbody>
</table>

+ $70000

Residual value = Expected sale

Price in last year

+$30000 (C04C04)

+ $40000

+ $40000

+ $50000

+$90000 (C06C06)

(1rWork)

CE 2nd CE/C

CF0 4 -150 000 Enter

C01 4 -30 000 Enter

C02 4 -10 000 Enter

C03 4 0 Enter [Yes, must enter $0]

C04 4 30 000 Enter

C05 4 +70 000 Enter

C05 4 3 Enter

C06 4 40 000 Enter

C06 4 2 Enter

NPV I = 15% Enter

NPV CPT = -$28,421.71

No, we would lose $28,421.71 in present dollars on this investment.