Assume the firm you work for is analyzing whether to expand its operations by building a new manufacturing facilities. Your boss has asked you to check a few numbers by using the following information to determine the incremental unlevered net income and free cash flow for the new facility both today and three years from today. Note: You only need to set up all the appropriate equations and fill in the correct numbers. You don’t have to solve anything.

The new facility will require a total investment of $16 million. Of this total, $9 million would be spent today and $7 million would be spent a year from today. Depreciation on the new facility will be determined using the 15-year MACRS class and would begin a year from today. The new facility will be built on land purchased five years ago for $2 million which could be sold today for $3 million. Market research to determine whether demand will be sufficient to support the new factory cost $1 million. Of this total, $600,000 was paid up front a year ago and the balance of $400,000 is due today.

Sales associated with the new facility is estimated to equal $135 million a year from today, $139 million two years from today, $138 million three years from today, $140 million four years from today, and $142 million five years from today. Cost of Goods Sold are expected to equal 80% of revenue and fixed selling and administrative costs are expected to equal $16 million per year. Your firm’s marginal tax rate equals 35%.

The incremental working capital (in millions) associated with the new facility is expected to have the following values (Note: t = 0 is today, t = 1 is one year from today, t = 2 is two years from today, t = 3 is three years from today, etc):

<table>
<thead>
<tr>
<th></th>
<th>t = 0</th>
<th>t = 1</th>
<th>t = 2</th>
<th>t = 3</th>
<th>t = 4</th>
<th>t = 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>0</td>
<td>3.2</td>
<td>2.9</td>
<td>3.7</td>
<td>3.9</td>
<td>3.8</td>
</tr>
<tr>
<td>A/R</td>
<td>0</td>
<td>80.2</td>
<td>76.8</td>
<td>67.1</td>
<td>69.1</td>
<td>72.7</td>
</tr>
<tr>
<td>Inventory</td>
<td>0</td>
<td>7.1</td>
<td>8.1</td>
<td>5.7</td>
<td>6.9</td>
<td>8.7</td>
</tr>
<tr>
<td>A/P</td>
<td>0</td>
<td>18.0</td>
<td>22.0</td>
<td>13.4</td>
<td>21.3</td>
<td>19.7</td>
</tr>
</tbody>
</table>

The facility would be funded with cash and by borrowing $8 million from Bank of America at an annual interest rate of 3.5% per year.

\[
\begin{align*}
\text{FCF}_0 &= D + D - CE_0 - D \\
CE_0 &= 9 + (3 - (3 - 2)(.35)) \\
\text{UNI}_3 &= (138 - .8(138) - 16 - .0955(16))(1 - .35) \\
\text{FCF}_3 &= \text{UNI}_3 + .0955(16) - D - \Delta \text{NWC} \\
\Delta \text{NWC} &= \text{NWC}_3 - \text{NWC}_2 \\
\text{NWC}_3 &= 3.7 + 67.1 + 5.7 - 13.4 \\
\text{NWC}_2 &= 2.9 + 16.9 + 8.1 - 22.0
\end{align*}
\]