Assume that you can buy or sell (or short-sell) any of the following securities:

Risk-free bonds: bonds that mature one year from today earn 3% per year and bonds that mature two years from today earn 5% per year.

Risky securities:

<table>
<thead>
<tr>
<th>Security</th>
<th>Prices Today</th>
<th>Payoff one year from today if the economy is</th>
<th>Payoff two years from today if the economy is</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bid Ask</td>
<td>Strong</td>
<td>Weak</td>
</tr>
<tr>
<td>Private Dell</td>
<td>$203 $207</td>
<td>$100</td>
<td>$50</td>
</tr>
<tr>
<td>MS Machine</td>
<td>$183 $186</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

Golden Fleece ETF: Golden Fleece ETF holds the following positions (per share): long 3 shares of Private Dell, short 1 share of MS Machine, short $100 of risk-free bonds that mature one year from today, and long $200 of risk-free bonds that mature two years from today. The bid price for this ETF is $530 and the ask price for the ETF is $535.

What set of transactions today will generate an arbitrage profit for you today. In your answer list all transactions required today and all individual and total cash flows today, a year from today, and two years from today. Use a “+” for an inflow of cash and a “-“ for an outflow of cash. Note: I recommend setting up a table like is in the notes.

Payoff on ETF: $r_1 = 5 = 3(100) - 100 = 200; \ w = 3(52) - 100 = 50$

Cost of bonds: $1 - yr = \frac{100}{103} = .9709; \ 2 - yr = \frac{200}{1.05^2} = 181.41$

Cost to buy equivalent part: $3(207) - 183 - 97.09 + 181.41 = 522.32$

Proceeds from selling equivalent part: $3(203) - 186 - 97.09 + 181.41 = 507.32$

$\Rightarrow$ Arbitrage = short ETF & buy portfolio

\[
\begin{array}{c|cccccc}
\text{Trans} & \text{CF}_0 & \text{CF}_1 & \text{CF}_2 & \text{CF}_3 & \text{CF}_4 & \text{CF}_5 \\
+3 \text{ Short ETF} & +3(207) & +621 & -300 & +600 & +300 & +100 \\
+3 \text{ Buy 3 PD} & -621 & +183 & -100 & +300 & +150 & +200 \\
+3 \text{ Short MSN} & +97.09 & +2 & +100 & +100 & +200 & +200 \\
+3 \text{ Short 1-yr risk free} & -181.41 & +2 & 0 & +100 & +200 & +200 \\
+3 \text{ Buy 2-yr risk free} & +7.68 & +2 & +100 & +100 & +200 & +200 \\
\hline
\text{Total} & +7.68 & +2 & +100 & +100 & +200 & +200 \\
\end{array}
\]