Quiz B for 2:30 Class: 9/11/13

Name __________________________________________________________

**Short Answer 1:** What three things might cause the risk premium on a security to rise?

- Market risk rises, investors become more risk-averse, security moves more up-market

**Short Answer 2:** Assume the risk-free interest rate equals 1% and that $200 investment in the market might pay off $245 one year from today and might pay off $185 one year from today. These two outcomes are equally likely. Set up the calculations determined to make the market risk premium.

\[
\begin{align*}
\frac{\frac{1}{2}(245) + \frac{1}{2}(185) - 200}{200} \cdot 1.01 \quad &\text{or} \quad \frac{\frac{1}{2}(245 - 185) + \frac{1}{2}(185 - 185) + 1}{200} \\
\end{align*}
\]

**Problem:** Given the following information show how you could generate the highest possible arbitrage profit today. Be sure to list all individual transactions, the resulting cash flows from each transaction, and all total cash flows. Use a “+” for inflows and a “-” for outflows. I will assume a “+” if you show neither. I recommend building a table.

Risk-free bonds: You can buy or short-sell any amount of risk-free bonds. The rate on risk-free bonds maturing in 1 year is 1.5% and on risk-free bonds maturing in two years is 1.75%.

Risky securities: The prices and number of shares available at each price are as shown below.

<table>
<thead>
<tr>
<th>Security</th>
<th>Bid</th>
<th>Ask</th>
<th>Payments in one</th>
<th>Payments in two</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Price</td>
<td>Number</td>
<td>year if economy is</td>
<td>years if economy is</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Weak</td>
<td>Strong</td>
</tr>
<tr>
<td>Market</td>
<td>$929</td>
<td>500</td>
<td>$100</td>
<td>$150</td>
</tr>
<tr>
<td>van Gogh Inc.</td>
<td>$985</td>
<td>300</td>
<td>$50</td>
<td>$100</td>
</tr>
</tbody>
</table>

**Wall Street Journal Questions are on the back of this page.**

Arbitrage: Buy van Gogh = 987 + 929 - \frac{100}{1.05^2} = 96.59

Short take-off = 985 - 931 + 49.26 - 96.59 = 6.67

Total + 137 94 + 4