Key for Spring 2013: Problem 1 from Final A for 2:30 Class

Assume capital markets are perfect and that Gnusmas and Elppa have identical assets. Gnusmas' outstanding equity has a market value of $100 million and has debt that matures for $200 million seven years from today. These bonds earn an interest rate of 8% per year. Eppla has no debt and its equity has a market value of $200 million. What set of transactions will generate an arbitrage profit today? Show that the conditions of arbitrage are met if the firm's value ends up at \$175 or \$250 million seven years from today. Note: calculations required.

$V_0^L = 100 + \frac{200}{(1.08)^7} = 100 + 116.70 = 216.70 > 200$

sell/short buy

⇒ buy Elppa's stock + short-sell Gnusmas' stock + bonds

Trans	t_0	t_1: 175	t_1: 250
+5 Buy Elppa's stock	-200	+175	+250
+5 Shortsell Gnusmas' bonds	+116.70	-175	-200
+5 Short-sell Gnusmas' stock	+100	0	-50
Total	+16.70	0	0