**Problem 1**

First, clean up the market value of equity for the cross holdings

Total market value of equity = 3000 \( \times \) 150 * 20

- Value of equity in Coleman Holdings = 500 \( \times \) 20% of 2500
- Value of equity in Silicon Tech = 1200 \( \times \) 60% of 2000

Value of Equity in Steel business = 1300

Next, clean up the debt for the consolidated debt from Silicon

Value of debt = 2000

- Value of Debt in Silicon Tech = 500 \( \times \) Silicon Tech's debt is consolidated in balance sheet

Value of debt in Steel business = 1500

Finally, clean up the EBITDA

Consolidated EBITDA = 700

- EBITDA of Silicon Tech = 300
- EBITDA of Steel Business = 400

EV of Steel Business = 2800

EV/ EBITDA of Steel Business = 7.00

**Problem 2**

a. Estimated PS in year 5 = 3.5 \( \times \) Net margin = 10%; 1.5 + .2 (10) = 3.5

Estimated Equity value in year 5 = 1750 \( \times \) 3.5 \( \times \) 500

b. Total beta = 2.25

Cost of equity = 14.00%

c. Value of equity today (going concern) = $908.90 \( \times \) 1750/1.14^5

Survival adjusted equity value = $363.56 \( \times \) 908.90 \( \times \) .40