**Problem 1**

Bond Rating = BBB
Interest Rate = 9.00%

After-tax Cost of Debt = 5.40%

Unlevered Beta = \( \frac{1.06}{1+(1-0.4)(0.1111)} = 0.99375621 \)

Beta at 25% D/E Ratio = \( 0.99(1+0.6(0.25)) = 1.14281964 \)

Cost of Equity = 7% + 1.14 (5.5%) = 13.27%

Cost of Capital = 5.40% (.2) + 13.27% (.8) = 11.70%

**Problem 2**

Change in Firm Value = \( (250 + 50) \times (0.11-0.10) \times (1.05)/(0.10-0.05) = 63 \)

Change in stock price = \( \frac{63}{10} = $6.30 \) ($10.50 if you assume buyback at current price)