Spring 2012 Name:

# Quiz 2: Valuation

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. You are trying to assess the free cash flows to the firm for a high growth firm that had an operating loss of $40 million, on revenues of $100 million in the most recent year; it currently has a cost of capital of 15%. The company is expected to post much higher revenues and improved operating margins over the next 5 years as well as see its cost of capital decline over the time. In the table below, you see the estimates for these numbers:

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| Revenues | $150 | $180 | $210 | $225 | $250 |
| Operating Income (pre-tax) | -$15 | $20 | $40 | $60 | $80 |
| Cost of capital | 15% | 12% | 10% | 9% | 8% |

a. If the tax rate is 40% and the firm has $75 million in NOL (Net Operating Loss) (including the loss from most recent year) to carry forward, estimate the free cash flow to the firm each year for the next 5 years. You can assume that the firm has to maintain a sales-to-capital ratio of 2.0 to generate incremental sales for the next 5 years. ( 2 points)

b. Estimate the present value of these cash flows, given the expected costs of capital for this firm. (1 point)

2. You have been given the expected dividends and earnings for a bank for the next 5 years in the table below. The book value of equity for the bank is $ 200 million today, and the cost of equity is expected to be 9% in perpetuity.

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| Net Income | $30 | $40 | $50 | $60 | $70 |
| Dividends | $20 | $20 | $20 | $20 | $20 |

a. Based on these estimated earnings and dividends (and assuming no new stock issues or buybacks), estimate the return on equity in year 5. (1.5 points)

b. Assuming that the net income beyond year 5 will grow at 3% a year and that the return on equity in perpetuity will be equal to the return on equity earned in year 5, estimate the terminal value for equity (at the end of year 5). (1.5 points)

3. You are valuing Gateaux Inc., a publicly traded food company that owns 60% of Cakery, a retail bakery; Gateaux has fully consolidated the interest it has in Cakery Inc, in it's financial statements. You have collected the following information of the financial statements of the two companies:

| | After-tax Operating Income | Debt (Book & Market) | Equity (Book) | Cash (Book) |
|---|---|---|---|---|
| Gateaux (consolidated) | \$15 | \$25 | \$70 | \$15 |
| Cakery | \$6 | \$15 | \$25 | \$10 |

The cost of capital of food companies is typically 8% and the cost of capital for retail bakeries is 10%. Both Gateaux and Cakery are in stable growth and are expected to grow 4% a year in perpetuity. Estimate the value of equity in Gateaux Inc. (4 points)