Quiz 1: Valuation

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

1. You are reviewing the valuation of Xtra Inc., a stable growth, chemical company. The analyst has arrived at a value of $2.4 billion for the equity in the firm, by discounting cash flows (after interest expenses and debt cash flows) at a discount rate of 8%, using a 2% growth rate in perpetuity; he used the cost of capital as the discount rate. If Xtra Inc. has no cash balance, a debt to capital ratio of 20% and an after-tax cost of debt of 4%, estimate the correct value of equity in the firm. (3 points)

2. You are attempting to compute the cost of capital for Zimmer Inc., a company that operates in three countries and two different businesses. You have been provided with the following information on the geographical breakdown of revenues:

Country	Government bond rate	Sovereign Rating and Default Spread	Relative volatility (Equity to government bond)	Zimmer's revenues in country
United States	2%	Aaa (0%)	2.5	$500 m
Brazil	9%	Baa1 (1.75%)	1.6	$300 m
Chile	5%	Aa3 (0.7%)	1.8	$ 200 m

- You have also been provided with the business breakdown for Zimmer:

Business	Zimmer's revenues from business	Average for firms in sector	
		Unlevered Beta	EV/ Sales Ratio
Software	$ 600 million	1.50	2.0
Consulting	$ 400 million	0.90	1.5

- Zimmer has a debt to equity ratio of 25% and faces a marginal tax rate of 40%.

a. Estimate the levered beta for Zimmer Inc. (2 points)

b. Estimate the US dollar cost of equity for Zimmer. (You can assume that the mature market premium is 5.4%) (2 points)

3. You are trying to estimate the free cash flow to the firm for Fiona Software Inc., a technology company and have access to the income statement for the most recent year (with all numbers in millions):

Revenues	$1,500
- R&D expense	$150
- Op Lease expense	$100
- Other COGS	$750
EBIT	$500
- Interest expense	$140
Taxable income	$360
- Taxes	$108
Net Income	$252

The company reported $150 million in capital expenditures during the year. Putting your valuation knowledge to use, you have also uncovered the following:

- The company has expected lease commitments of $80 million each year for the next 5 years. The pre-tax cost of debt is 5%.
- The amortizable life of the R&D is 3 years, and based on the R&D expenses for the last 3 years, you have computed that the amortization in the most recent year would have been $100 million and that the unamortized R&D from prior years would be $250 million today.

Estimate the corrected after-tax operating income for the most recent year. (3 points)