Spring 2017 Name:

Quiz 1: Valuation

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

1. Savoy Drugs, a US pharmaceutical firm, is considering buying Zuma A.G., a privately owned German pharmaceutical company. The cash flows for Zuma have been estimated (in millions of Euros) as follows:

	Next year
Net Income	100.00 €
- (Cap Ex - Depreciation)	50.00 €
- Change in non-cash WC	20.00 €
+ Net New Debt Issues	10.00 €
Cash flow	40.00 €

These cash flows are <u>expected to grow at the inflation rate in perpetuity</u>. Savoy Drugs has a <u>cost of equity of 9% and a cost of capital of 7.5%, both in US dollars</u>. If the inflation rate in Euros is 1% and the inflation rate in US dollars is 2%, what is the value of Zuma? (2 points)

2. Krystal Inc. is a consumer products company with operations in three countries, India, China and the US.

	India	China	US
Revenues (in millions of US$)	$500	$1500	$2000
Government Bond rate in **local currency**	7.00%	4.00%	2.50%
Default Spread of Government Bond	2.00%	1.00%	0.00%
Equity Market Standard deviation	20.00%	18.00%	15.00%
Std deviation in Government Bond	16.00%	12.00%	10.00%

The beta for the company is 1.20 and the equity risk premium for a mature market (like the US) is 5.5%. You can also assume that the local currency and foreign currency ratings are the same for each country.

a. Estimate the Indian Rupee cost of equity that Krystal should use for its Indian operations. (1 point)

b. Estimate the US dollar cost of equity for the entire firm. (2 points)

3. Collins Inc. is a publicly traded firm that operates in three businesses, steel, chemicals and mining, and the breakdown is below:

	Steel	Chemicals	Mining
Revenues	$1,000.00	$800.00	$1,200.00
Enterprise Value/Sales Ratio	0.80	0.75	0.50
Unlevered beta	0.90	1.20	0.40

If the company is fairly valued by the market and has $500 million in debt, estimate the levered beta (assuming a tax rate of 30%). (3 points)

4. You have been given accounting numbers for Zippo Inc. and have been given the following information for the last twelve months (in millions of US dollars):

Income Statement: Last Twelve Months		**Balance Sheet**	
Revenues	$1,500.00	Fixed Assets	$1,000.00
- Operating expenses	$750.00	Cash	$200.00
- Depreciation	$150.00	Non-cash Current Assets	$300.00
Operating Income	$600.00	*Total Assets*	$1,500.00
- Interest Expenses	$100.00	Non-debt Current Liabilities	$150.00
Taxable Income	$500.00	Debt	$750.00
- Taxes	$150.00	Equity	$600.00
Net Income	$350.00	*Total Liabilities*	$1,500.00

The tax rate paid last year is a good measure of the effective tax rate for the future and revenues and operating income are expected grow 10% next year, but non-cash working capital as a percent of revenues will halve next year. The company is planning no conventional capital expenditures but plans to do an acquisition costing $250 million next year. Estimate the free cash flow to the firm next year. (2 points)