Quiz 1: Equity Valuation

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

1. Concur Tech is a software firm that is considering entering into a joint venture with an AI firm, and you have collected information on both businesses:

	Software	AI
Riskfree rate	5.00%	5.00%
Cost of equity	12.00%	15.00%
Cost of capital	10.00%	12.50%

The joint venture will produce an AI product, 40% of which will be sold to the government (for **guaranteed long term payments**) and 60% to business customers, to generate free cash flows, before debt payments, of $40 million. **What discount rate would you use to discount these expected free cash flows. (2 points)**

2. You have been asked to estimate the cost of equity for Orgun Chemicals, a Turkish firm with operations in Turkey and Russia and have collected the following information:

	Turkey	Russia	Germany
Revenues (in $ millions)	$750.00	$250.00	$0
Currency	Lira	Rubles	Euros
10-year government bond rate (in local currency)	20%	15%	3%
10-year government bond rate (Euros)	11.00%	8.00%	3%
Relative equity volatility	1.25	1.25	NA

If the company has an equity beta of 1.10 and the equity risk premium for mature markets is 5%, **estimate the cost of equity in Turkish Lira.** (3 points)

3. Camphor Inc is a a company that operates in two businesses, and you have collected the following information on **how much value Camphor gets from each business**, and **industry averages for regression betas and debt to equity ratios** for each business:

		Industry average	
	Estimated value (in millions)	Regression Beta	Debt/Equity
Steel	$ 600.00	1.17	40%
Shipping	$ 200.00	1.74	60%

If Camphor is fairly valued (i.e., the market value of the firm is the sum of its two business values), and has $160 million in debt outstanding, estimate the equity beta (levered beta) for Camphor. (The marginal tax rate is 25%) (2 points)

4. You are trying to estimate the expected free cash flow to the firm for Funicular Inc., a young, high growth company **that has been in operation only one year** (the most recent year) and with high expected growth in revenues next year:

	Most recent year	Next year
Revenues (in $ millions)	$500	$1,000
Operating margin	-10%	15%
Invested Capital at start of year ($ millions)	$300	$450

Funicular expects to face a marginal tax rate of 25%, once it becomes profitable, **estimate the expected free cash flow to the firm next yea**r. (3 points)