

Quiz 2: Valuation

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

1. Black Reed Inc. is a publicly traded company that reported an operating loss on revenues of \$ 1 billion in the most recent time period. You expect revenues to grow at 2% a year in perpetuity and you also expect the firm to turn from operating losses to operating profits over the next 5 years:

	1	2	3	4	5
Revenues (in millions)	\$1,020.00	\$1,040.40	\$1,061.21	\$1,082.43	\$1,104.08
Pre-tax Operating margin	-3.00%	-1.00%	2.00%	5.00%	8.00%

The firm has a net operating loss of \$30 million to carry forward and expects to pay a marginal tax rate of 40%, once it has absorbed these losses. If the sales to capital ratio on incremental revenues is expected to be 2.00 for the next 5 year, **estimate the free cash flows to the firm for each of those years.** (3 points)

2. Litfast Technology is a small software company that has 100 million shares trading at \$9/share, \$300 million in debt outstanding and \$100 million in cash & marketable securities. The company also has 20 million options that you have valued at \$5/option; you used an option pricing model to arrive at this estimate. Assuming that the company's shares and options are fairly valued, that it has a cost of capital of 10%, a return on capital of 20% and an expected growth rate of 2% in perpetuity, **estimate the expected after-tax operating income next year.** (3 points)

3. Juno Enterprises is a publicly traded company that owns 60% of Vellum Inc., another publicly traded company. They are both stable growth companies, growing 2% a year in perpetuity, with a cost of capital of 10%. The table below lists key numbers for Juno (consolidated) and Vellum:

	Juno (consolidated)	Vellum (stand alone)
Operating income (after-tax)	\$ 110 million	\$20 million
Book value of Equity	\$ 1000 million	\$ 100 million
Debt	\$225 million	\$ 50 million
Cash	\$100 million	\$ 25 million

Assuming that Juno has 100 million shares outstanding, **estimate the value per share for Juno.** (4 points)