Quiz A for 9:45 Class: 7/22/13 Name Key

Assume that the firm where you work is trying to decide whether or not to build a new manufacturing facility to build natural-gas-powered cars. Your boss has asked you to check a few numbers by calculating (or setting up to calculate) the store's unlevered net income and free cash flow both today and four years from today.

Your firm has just completed a feasibility study which estimates the demand for natural-gas-powered cars. The $5 million fee for this study is due today. If your firm proceeds with building the factory, it would take two years to build and would begin production two years from today. However, the first sales would occur three years from today. Initial revenues (three years from today) would equal $230 million and would grow at a rate of 8% per year for five years and at a rate of 2% per year thereafter. Cost of sales would equal 85% of revenues and fixed selling and administrative costs would equal $22 million per year. The factory will cost $73 million to build. Of this total, $40 million would be paid today and $33 million would be paid a year from today. The $40 million cost today would be funded from the firm's surplus cash. However, next year, the firm would issue bonds to cover the remaining building costs. The factory would fall into the 7-year MACRS class, and your firm will recognize the first year of depreciation when sales begin three years from today. The factory will be built on land that was acquired five years ago for $3 million. The current market value of this land is $4 million. You firm's marginal tax rate is 35%. The working capital (in millions) associated with the project is as follows (Note: t = 3 is three years from today, t = 4 is four years from today, and t = 5 is five years from today):

	t = 3	t = 4	t = 5
Cash	37	35	34
Inventory	16	19	18
A/R	78	88	87
A/P	41	51	47

$FCF_0 = 0 + 0 - CE_0 - 0$ +3 (+6)

$CE_0 = 40 + (4 - (4-3)(.35))$ (+4, +6)

$UNI_4 = (R_4 - E_4 - D_4)(1-.35)$ (+4) +4

$R_4 = 230(1.08)$ +8

$E_4 = .85(R_4) + 22$ (+4, +4)

$D_4 = 73(.2449)$ (+4, +4)

$NWC_4 = 35 + 19 + 88 - 51$ +8

$NWC_3 = 37 + 16 + 78 - 41$ +8

$\Delta NWC_4 = NWC_4 - NWC_3$ +4

$FCF_4 = UNI_4 + D_4 - CE_4 - \Delta NWC_4$ +4

$CE_4 = 0$

-6 if incorrectly include sunk cost