15.501/516
Final Examination
December 18, 2002

Student Name: ____

School: ____

Professor: ____

- The exam consists of 13 numbered pages. Be sure your copy is not missing any pages.
- There are 125 points in total -- point allocations are stated at the beginning of each question. You have 3 hours. **Budget your time well**. We suggest you quickly go over the entire exam first before starting.
- Write your answers in the space provided, and show any computations you make.
- Write as legibly as possible -- we can't grade what we can't read!
- If a question is unclear, make an appropriate assumption that does not contradict any information given in the question.

GOOD LUCK !!

I. Interpreting the statement of cash flows. (10 points)

The following exhibit presents the statement of cash flows for Nike, Inc., maker of athletic shoes, for three recent years.

Nike Inc.: Statement of Cash Flows (amounts in millions)	Year 1	Year 2	Year 3
Operations			
Net income	167	243	297
Depreciation and amortization	15	17	34
Other Addbacks/Subtractions	(5)	5	3
Working Capital provided by Operations	*177*	*265*	*324*
(Increase) Decrease in Accounts Receivable	(38)	(105)	(120)
(Increase) Decrease in Inventories	(25)	(86)	(275)
(Increase) Decrease in Other Operating Current Assets	(2)	(5)	(6)
(Increase) Decrease in Accounts Payable	21	36	59
(Increase) Decrease in Other Operating Current Liabilities	36	22	32
Cash Flow from Operations	***169***	***127***	***14***
Investing			
Sale of Property, Plant and Equipment	3	1	2
Acquisition of Property, Plant and Equipment	(42)	(87)	(165)
Acquisition of Investment	(1)	(3)	(48)
Cash Flow from Investing	***(40)***	***(89)***	***(211)***
Financing			
Increase in Short-term Debt	0	0	269
Increase in Long-term Debt	0	1	5
Issue of Common Stock	3	2	3
Decrease in Short-term Debt	(96)	(8)	0
Decrease in Long-term Debt	(4)	(2)	(10)
Dividends	(22)	(26)	(41)
Cash Flow from Financing	***(119)***	***(33)***	***226***
Change in Cash	10	5	29
Cash, Beginning of the Year	74	84	89
Cash, End of the Year	84	89	118

Answer the following questions:

1. Why did Nike experience increasing net income but decreasing cash flow from operations during this three-year period? **(5 points)**

2. How did Nike finance its investing activities during the three-year period? Evaluate the appropriateness of Nike's choice of financing during Year 3. **(5 points)**

II. Inventory accounting (10 points)

The inventory footnote to the annual report of Ballistic Brothers & Co. reads in part as follows:

> Because of continuing high demand throughout the year, inventories were unavoidably reduced and could not be replaced. Under the LIFO system of accounting, used for many years by Ballistic Brothers & Co., the net effect of all the inventory changes was to increase pretax income by $900,000 over what it would have been had inventories been maintained at their physical levels at the start of the year.

The price of Ballistic Brothers & Co.'s merchandise purchases was $26 per unit during the year, after having risen erratically over past years. Ballistic Brothers & Co.'s inventory positions at the beginning and the end of the year appear below:

Date	Physical Count of Inventory	LIFO Cost of Inventory
January 1st	200,000 units	?
December 31st	150,000 units	$600,000

Answer the following questions:

1. What was the average cost per unit of the 50,000 units removed from the January 1st inventory? **(5 points)**

2. What was the January 1st LIFO cost of inventory? **(5 points)**

III. Accounting for bonds (25 points)

On January 1, 1985, First National Bank (FNB) acquired \$10 million of face value bonds issued on that date by Metro Area Inc. The bonds carried 12 percent annual coupons and were to mature 20 years from the issue date. Metro Area Inc. issued the bonds at par.

By 1990, Metro Area Inc. was in severe financial difficulty and threatened to default on the bonds. After much negotiation with FNB (and other creditors), it agreed to repay the bond issue but only on less burdensome terms. Metro Area Inc. agreed to pay 5 percent per year, i.e., annually, for 25 years and to repay the principal on January 1, 2015, or 25 years after the negotiation. FNB will receive \$500,000 every year starting January 1, 1991, and \$10 million on January 1, 2015.

By January 1, 1990, Metro Area Inc. was being charged 20 percent per year, compounded annually, for its new long-term borrowings.

Remember that the theoretical present value factor of an ordinary annuity is:

$$(\text{PV annuity, n years, i\%}) = \frac{1-(1+i)^{-n}}{i}$$

and answer the following questions:

1. At what value is Metro Area's bond recorded on FNB's balance sheet *before* the renegotiations? (*Hint*: FNB holds the bond as an investment and values the investment at present value. The accounting treatment of this investment in Metro Area's bond mirrors the treatment of the bond in Metro Area's balance sheet.) **(5 points)**

2. Determine the value of the bonds that FNB holds at the time of renegotiations using the market interest rate at the time of initial issue, 12 percent, compounded annually. In other words, what is the present value of the newly promised cash payments discounted at Metro Area's historical borrowing rate? **(5 points)**

3. Consider two accounting treatments for this negotiation (called a "troubled debt restructuring" by the FASB in its *Statement of Financial Accounting Standards* No. 114). **(10 points)**

   Scenario a: Write down the bonds to the value computed in part 2, and base future interest revenue computations on that new book value and the historical interest rate of 12 percent per year, compounded annually.

   Scenario b: Make no entry to record the negotiation, and record interest revenue as the amount of cash, $500,000, that FNB receives annually.

   Record using the <u>balance sheet equation</u> the transactions that take place on January 1, 1990 and January 1, 1991 under each of the two alternatives.

Scenario a	Cash	Investment in Bonds	Other Assets	Liabilities	Equity
1/1/1990					
1/1/1991					

Scenario b	Cash	Investment in Bonds	Other Assets	Liabilities	Equity
1/1/1990					
1/1/1991					

4. Which of the two methods listed in 3 best reflects the economic events that take place during and after the debt restructuring? Can you think of a third method to record the effect of the renegotiations? **(5 points)**

IV. Cost Accounting (15 points)

The Tyson Company buys chickens and disassembles them into fillets, wings and drumsticks. Suppose a whole chicken cost \$1.6 each, and on average weighs 32 ounces. The cost to process each chicken into parts is \$0.40 per chicken. Once the parts are obtained, separate processing is necessary to obtain marketable fillets, wings, and drumsticks. The fillets obtained from the chicken on average weigh 16 ounces, the wings weigh 4 ounces and the drumsticks weigh 12 ounces. Each part must be cleaned, inspected and packaged. The costs of cleaning and packaging fillets, wings and drumsticks are \$0.8, \$0.16 and \$0.04 respectively per chicken. Once cleaned and packaged, the fillets can be sold for \$2.4, wings for \$0.3 and drumsticks for \$0.8.

Answer the following questions:

1. What is the common cost per chicken shared by all three of Tyson's product lines (i.e., fillet, wings and drumsticks)? Allocate the cost to the three products based on weights, and show the related profits (losses). **(5 points)**

2. The management is contemplating dropping chicken wings and only producing fillets and drumsticks. Do you agree? Why or why not? **(10 points)**

V. Leases (25 points)

On January 1, 2001, Kruder Products, as lessee, leases a machine used in its operations. Kruder uses straight line depreciation for all of its equipments. The annual lease payment of $10,000 is due on Dec 31 of 2001, 2002 and 2003. The machine reverts to the lessor at the end of three years. The lessor can either sell the machine or lease it to another firm for the remainder of its expected total useful life of five years. The interest rate appropriate for Kruder Products is 12 percent annually. The market value of the machine at the inception of the lease is $30,000.

1. Is this lease an operating lease or a capital lease? **(5 points)**

2. Assume this lease qualifies as an operating lease. What are the expenses recorded for the lease in 2001, 2002 and 2003? **(5 points)**

3. Assume this lease qualifies as a capital lease. What are the expenses recorded for the lease in 2001? **(5 points)**

4. Which of the above methods, i.e., operating vs. capital lease results in a higher ROA (return on assets=income/average assets) in **2002**? Which method results in a higher leverage (liability/shareholder's equity) in **2002?** Why? **(5 points)**

5. Which of the above methods, i.e., operating vs. capital lease results in a higher **Cash Flow from Operations** in **2001**? Why? **(5 points)**

VI. Miscellaneous issues (20 points)

CBC Corporation is searching for ways to improve its performance. The head of marketing wants to offer larger sales discounts to repeat customers, while the head of operations wants reduce shipping and handling costs. The company's controller thinks there could also be an "accounting answer"-- his idea is to reduce the estimated life of packaging and delivery equipment in order to increase the amount of depreciation expense. He believes this would improve cash flow because depreciation expense is "added back" on the statement of cash flows.

CBC Corporation's 2002 income statement and selected balance sheet accounts appear below.

Income Statement (selected items)

Sales	$135,000
Cost of goods sold	(90,000)
Selling and admin.expenses (includes $8,000 depreciation)	(25,000)
Gain on sale of equipment*	10,000
Interest expense	(5,000)
Income taxes	(5,000)
Net income	$20,000

*Equipment had an original cost of $35,000; selling price was $18,000.

Balance Sheet (selected items)

	12-31-02 (Ending)	**01-01-02** (Beginning)
Cash	$14,000	$21,000
Accounts receivable	40,000	30,000
Merchandise inventories	55,000	61,000
Prepaid expenses	5,000	8,000
Accounts payable	35,000	40,000
Deferred revenue	15,000	12,000
Other liabilities	5,000	3,000

1. Determine the accumulated depreciation on the equipment sold in 2002? **(5 points)**

2. CBC deferred $5000 of their revenue to 2003 because the merchandise has not yet been shipped although the customers already paid in cash. Does deferring the revenue result in a deferred tax asset or liability? Why? **(5 points)**

3. How much cash was paid to merchandise suppliers in 2002? **(5 points)**

4. Use the chart below to indicate how increasing depreciation expense would affect the financial statements. Use **+** for increase, **-** for decrease, and NE for no effect. How do you like the controller's accounting solution? **(5 points)**

Operating Cash Flow	***Net Income***	***Total Assets***	Total Liabilities	***Total Stock-Holders' Equity***

VII. Consolidation (20 points)

The Coca Cola Company [**KO**] owns 44% of Coca Cola Enterprises [**CCE**], one of its anchor bottlers. Since its ownership percentage is lower than 50%, KO accounts for its investment in CCE using the equity method. Analysts have pointed out though that KO has a dominant influence on CCE and that to reflect the true economics of the relation between both companies, KO ought to **consolidate** CCE, rather than use the equity method.

a) Consider the simplified balance sheets of both KO and CCE on 12/31/Y1 **on the following page**. Using the information about the ownership percentage of KO in CCE, that is 44%, consolidate CCE's accounts into KO's. Notice that we have already started the consolidation. You just need to <u>complete</u> the consolidated balance sheet. (*Hint*: you need to first eliminate intra-company accounts, i.e., amounts CCE owns KO or vice versa before you can carry out the consolidation).
Show all calculations. **(10 points)**

The Coca Cola Company and Coca Cola Enterprises

Simplified Balance Sheets (12/31/Y1)

ASSETS	***KO***	***CCE***	***Consolidated***
Current Assets			
Cash and MS	1,315	8	1,323
Accounts receivable	1,695	510	2,205
Amounts due from the Coca Cola Co.	0	6	________
Inventories	1,117	225	1,342
Equity method investments			
Coca Cola Enterprises	556	0	________
PPE, net	4,336	2,158	6,494
Intangibles	944	5,924	________
Other Assets	5,078	233	5,311
Total assets	***15,041***	***9,064***	23,481
LIABILITIES			
Current liabilities			
Accounts Payable	4,425	796	________
Notes Payable	2,923	63	2,986
Non-current liabilities			
Long-term debt	1,141	4,138	5,279
Other non-current liabilities	966	630	1,596
Deferred income taxes	194	2,032	2,226
Minority Interest	0	0	________
EQUITY			
Common stock	428	145	________
APIC	1,291	1,116	________
Retained earnings	3,673	144	________
Total liabilities + equity	***15,041***	***9,064***	23,481

b) Consider now the following intra-company sales during the same fiscal year:
KO paid CCE **$2,424** (i.e., booked as revenue for CCE and COGS for KO)

We also have the following excerpts from the published income statements of both companies in fiscal Y1:

	KO	***CCE***
Sales	18,018	6,773
COGS	6,940	4,267
Gross Profit	**11,078**	**2,506**

The gross profit for KO is computed with CCE treated as an equity investment. Based on our information, what would have been KO's gross profit **if it had consolidated CCE rather than used the equity method? (5 points)**

c) CCE reports a net income of $82 in its published income statement of fiscal Y1. KO reports a net income of $2,986 in its published income statement of fiscal Y1, after incorporating the results of CCE using the equity method. What would be the net income of **KO** in Y1 **if it had consolidated CCE rather than used the equity method**? Explain why. **(5 points)**