IENG 215
Cost Estimating for Engineers
Exam I

Name (or Student ID) -

1. (15 pts) At the beginning of the fiscal year, the balance sheet showed assets of \$100 million and owners' equity of \$40 million. The annual income statement shows a profit (net income) of \$10 million for the year. Dividends of \$5 million are declared with the remaining going into retained earnings. Liabilities at the end of the year are \$40 million.

   a. Compute beginning of the year liabilities.

   $A = L + OE$
   $L = A - OE = 100 - 40 = \$60$ million

   b. Compute owner equity at the end of the year.

   $OE_{end} = OE_{begin} + NI - D$
   $= 40 + 10 - 5$
   $= \$45$ million

   c. Compute assets at the end of the year.

   $A_{End} = L_{end} + OE_{end}$
   $= 40 + 45$
   $= \$85$ million

1. (20 pts) You are given the following partially completed income statement and balance sheet for DataLogger Inc. You are to use your knowledge of the relationship between the two to fill in the missing data for both the income statement and the consolidated balance sheet. You may assume that no additional land, building, or equipment purchases were made during the year. Show all work.

DataLogger Balance Sheet

	2001	2002
Current Assets		
Cash	$60,000	75,000
Accounts Receivable	70,000	65,000
Inventories	120,000	145,000
Total Current Assets	$250,000	$285,000
Other Assets		
Land	140,000	140,000
Building	280,000	255,000
Total Fixed	420,000	395,000
Total Assets	$670,000	680,000
Current Liabilities		
Accounts Payable	50,000	$40,000
Notes Payable	50,000	40,000
Total Current Liabilities	$100,000	$80,000
Long Term Liabilities	240,000	189,000
Total Liabilities	340,000	$269,000
Owner's Equity		
Common Stock	225,000	225,000
Retained Earnings	105,000	186,000
Total Net Worth	330,000	411,000
Total Liabilities & Owner Equity	670,000	680,000

DataLogger Income Statement

	2001-2002
Net Sales	$1,400,000
Cost of Goods Sold	750,000
Gross Margin	650,000
Operating Expenses	
Sales Expenses	225,000
General & Admin	75,000
Depreciation	25,000
Interest or debt	25,000
Total Expenses	350,000
Profit before Tax	300,000
Income taxes	111,000
Net Income (Loss)	189,000

$Cash_{02} = 285 - 65 - 145 = 75{,}000 \Rightarrow$ Tot Assets $= 680{,}000 = TL + OE = 680$

$\Rightarrow RE = 680 - 269 - 225 = 186{,}000$

$Depr = Bldg_{01} - Bldg_{02} = 280 - 255 = 25{,}000$

$\Rightarrow Expenses = 350{,}000$

$\Rightarrow NI = 189{,}000$

$Retained_{02} = retained_{01} + NI - dividends = 105 + NI - dividends = 105 + 189 - D$

You are given the following consolidate income statement and balance sheet for DataMate Incorporated. You are to use this information for questions 2-4.

DataMate Balance Sheet

	2001	2002
Current Assets		
Cash	$150,000	$180,000
Accounts Receivable	125,000	140,000
Inventories	180,000	180,000
Total Current Assets	$455,000	$500,000
Other Assets		
Land	150,000	150,000
Building	480,000	440,000
Total Fixed	630,000	590,000
Total Assets	$1,085,000	$1,090,000
Current Liabilities		
Accounts Payable	$200,000	$160,000
Notes Payable	100,000	120,000
Total Current Liabilities	300,000	280,000
Long Term Liabilities	350,000	320,000
Total Liabilities	650,000	600,000
Owner's Equity		
Common Stock	300,000	300,000
Retained Earnings	135,000	190,000
Total Net Worth	435,000	490,000
Total Liabilities & Owner Equity	$1,085,000	$1,090,000

DataMate Income Statement

	2001-2002
Net Sales	$2,400,000
Cost of Goods Sold	1,650,000
Gross Margin	750,000
Operating Expenses	
Sales Expenses	300,000
General & Admin	150,000
Depreciation	40,000
Interest or debt	30,000
Total Expenses	520,000
Profit before Tax	230,000
Income taxes	85,000
Net Income (Loss)	$145,000

2. (20 pts) You are to compute the following ratios and comment on the financial health of the company from a lenders point of view.
   a. Quick (Asset) Ratio
   b. Debt to Asset
   c. Debt to Capitalization
   d. Debt to Equity

$$QR = \frac{\text{cash + Accts Rec}}{\text{current Liab}} = \frac{180+140}{280} = \underline{\underline{1.14}}$$

$$D/A = \frac{TL}{TA} = \frac{600}{1{,}090} = \underline{\underline{0.55}}$$

$$D/C = \frac{LTD}{NA} = \frac{320}{1{,}090-280} = \frac{320}{810} = \underline{\underline{0.39}}$$

$$D/E = \frac{TL}{OE} = \frac{600}{490} = \underline{\underline{1.22}}$$