TEST NUMBER 1

Question 1 (32 Points)

The following are partial financial statements for an industrial firm that you are required to analyze and value. All amounts are in millions of dollars.

Income Statement for Fiscal Year 2004

Sales	2,000
Cost of goods sold	1,500
Gross margin	500
Selling and general expenses	300
Operating income	200
Interest income	5
	205
Interest expense	21
Restructuring charge	14
Income before tax	170
Income taxes	60
Net income	J

Balance Sheet, Year 2004

Assets	2004	2003	Liabilities and Equity	2004	2003
Operating assets	A	910	Operating liabilities	113	C
Debt securities	110	B	Financing debt	360	340
			Perferred stock	100	100
			Common equity	E	500
	1,146	1,000		D	1,000

Statement of Common Shareholders Equity, Year 2004

Balance, end of 2003	F
Net income	G
Common dividends	(30)
Preferred dividends	H
Unrealized loss on debt securities held	(5)
Foreign currency translation gain	4
Balance, end of 2004	I

The firm's statutory tax rate is 35.3%.

(a.) Supply the missing numbers, A to J.

A = 1,036

B = 90

C = 60

D = 1,146

E = 573

F = 500

G = 110

H = (6)

I = 573

J = 110

(If you are unable to calculate one of these numbers, make a reasonable guess before proceeding to part (b) of the question.)

To answer the remainder of the questions, prepare the reformulated income statement and balance sheet:

Income Statement, 2004

Core operating income		200.00	
Tax reported	60.00		
Tax on unusual item	4.94		
Tax on NFE	5.65	70.59	
Core OI after tax		129.41	(ii)
Unusual item (restructuring)	14.00		
Tax on UI (@ 0.353)	4.94		
	9.06		
Foreign currency gain	4.00	5.06	
Operating income		124.35	
Net financial expense:			
Interest expense	21.00		
Interest income	5.00		
	16.00		
Tax (@ 0.353)	5.65		
	10.35		
Unrealized loss on debt	5.00		
Preferred dividends	6.00	21.35	(iii)
Comprehensive income		103.00	(i)

Balance Sheet

	2004	2003
NOA	923	850
NFO	350	350
CSE	573	500
OA	1,036	910
-OL	113	60
NOA	923	850
FL	460	440
FA	110	90
NFO	350	350

(b) Calculate the following for 2004. Use beginning of year balance sheet numbers in denominators.

(i) Comprehensive income

Comprehensive income = 110 – 5 + 4 – 6 = 103

NI OCI Pref. Div.

(ii) Core operating income, after tax

129.41

(iii) Net financial expense, after tax

21.35

(iv) Return on net operating assets (RNOA)

RNOA = 124.35/850 = 14.63%

(v) Core return on net operating assets (Core RNOA)

Core RNOA = 129.41/850 = 15.22%

(vi) Net borrowing cost (NBC)

NBC = 21.35/350 = 6.1%

(vii) Free cash flow

$$
\begin{aligned}
C - I &= OI - \Delta NOA \\
&= 124.35 - (923 - 850) \\
&= 51.35
\end{aligned}
$$

(viii) Net payments to debt holders and debt issuers

$$
\begin{aligned}
F &= C - I - d \\
&= 51.35 - 30 \\
&= 21.35
\end{aligned}
$$

Also,

NFE – NFO = 21.35 – 0 = 21.35

(c) Show that the following relation holds for this firm:

ROCE = RNOA + (Financial Leverage x Operating Spread)

ROCE = 103/500 = 20.6%
FLEV = 350/500 = 0.7 (beginning of 2004)
20.6% = 14.63% + [0.7 × (14.63% - 6.1%)]

(d) Show that the following relation holds for this firm. Use 3% for the short-term borrowing rate. ROOA is return on operating assets.

RNOA = ROOA + [Operating Liability Leverage x (ROOA – Short-term Borrowing Rate)]

$$\text{ROOA} = \frac{124.35 + (0.03 \times 60)}{910} = 13.86\%$$

OLLEV = 60/850 = 0.071 (beginning of 2004)

14.63% = 13.86% + [0.071 × (13.86% - 3.0%)]

(e) Forecast ROCE for 2005 for the case where RNOA is expected to be the same as core RNOA in 2004 and the net borrowing cost is expected to be the same as in 2004.

FLEV, beginning of 2005 = 350/573 = 0.611

ROCE = 15.22% + [0.611 × (15.22 – 6.1)]
= 20.79%

OR,

OI	=	923 × 0.1522	=	140.48
NFE	=	350 × 0.061	=	21.35
CI				119.03

ROCE = 119.31/573 = 20.79%

(f) Value the equity under a forecast that

(i) Return on net operating assets in the future will be the same as core RNOA in 2004.
(ii) Sales are expected to grow at 4% per year.
(iii) Asset turnovers will be the same as in 2004.

The required return for operations is 9%.

$$V^{E}_{2004} = 573 + \frac{(0.1522 - 0.09) \times 923}{1.09 - 1.04}$$

$$= 1{,}721$$

(g) Calculate the intrinsic levered price-to-book ratio and enterprise price-to-book and show that the two are related in the following way:

Levered P/B = Enterprise P/B + [Financial Leverage × (Enterprise P/B – 1)]

$$V^{NOA}_{2004} = 1{,}721 + 350 = 2{,}071$$

Levered P/B = 1,721/573 = 3.00

Enterprise P/B = 2,071/923 = 2.24

3.00 = 2.24 + [0.611 x (2.24 – 1.0)]

(h) Calculate the intrinsic trailing levered P/E and the trailing enterprise P/E. Show that the two are related in the following way:

Levered P/E = Enterprise P/E + [Earnings Leverage × (Enterprise P/E – 1/NBC – 1)]

Levered P/E $= \frac{1{,}721+30}{103} = 17.00$

Enterprise P/E $= \frac{2{,}071+51.35}{124.35} = 17.07$

ELEV $= \frac{21.35}{103} = 0.207$

$$17.00 = 17.07 + [0.207 \times (17.07 - \frac{1}{0.061} - 1)]$$

Question 2 (8 points)

At the end of the fiscal year ending June 30, 2003, Microsoft reported common equity of $64.9 billion on its balance sheet, with $49.0 billion invested in financial assets (in the form of cash equivalents and short term investments) and no financing debt. For fiscal year 2004, the firm reported $7.4 billion in comprehensive income, of which $1.1 billion was after-tax earnings on the financial assets.

This month Microsoft is distributing $34 billion of financial assets to shareholders in the form of a special dividend.

a. Calculate Microsoft's return on common equity (ROCE) for 2004.

ROCE = 7.4/64.9 = 11.40%

b. Holding all else constant what would Microsoft's ROCE be after the payout of $34 billion?

Income statement after payout

OI	6.30	(As before: 7.4 – 1.1 = 6.3)
NFI (15 × 0.0224)	0.34	(NFA = 49 – 34 = 15)
Comp. income	6.64	(Rate of return = 1.1/49 = 0.0224)

CSE = 64.9 – 34.0 = 30.9
ROCE = 6.64/30.9 = 21.49%

Also, with new FLEV of – 0.485,
ROCE = 39.62 (– 0.485 × (39.62 – 2.24))
= 21.49%

c. Would you expect the payout to increase or decrease earnings growth in the future? Why?

Increasing leverage always increases expected earnings growth. The payout increases leverage (in this case, it makes the leverage less negative).

a. What effect would you expect the payout to have on the value of a Microsoft share?

The per-share value of the shares will drop by the amount of the dividend per share.

[Note: if the payout were via a share repurchase, there would be no effect on per-share value]