CHAPTER 2
WORKING WITH FINANCIAL STATEMENTS

Answers to Concepts Review and Critical Thinking Questions

1. Liquidity measures how quickly and easily an asset can be converted to cash without significant loss in value. It's desirable for firms to have high liquidity so that they can more safely meet short-term creditor demands. However, liquidity also has an opportunity cost. Firms generally reap higher returns by investing in illiquid, productive assets. It's up to the firm's financial management staff to find a reasonable compromise between these opposing needs.

2. The recognition and matching principles in financial accounting call for revenues, and the costs associated with producing those revenues, to be "booked" when the revenue process is essentially complete, not necessarily when the cash is collected or bills are paid. Note that this way is not necessarily correct; it's the way accountants have chosen to do it.

3. Historical costs can be objectively and precisely measured, whereas market values can be difficult to estimate, and different analysts would come up with different numbers. Thus, there is a tradeoff between relevance (market values) and objectivity (book values).

4. Depreciation is a non-cash deduction that reflects adjustments made in asset book values in accordance with the matching principle in financial accounting. Interest expense is a cash outlay, but it's a financing cost, not an operating cost.

5. Market values can never be negative. Imagine a share of stock selling for –$20. This would mean that if you placed an order for 100 shares, you would get the stock along with a check for $2,000. How many shares do you want to buy? More generally, because of corporate and individual bankruptcy laws, net worth for a person or a corporation cannot be negative, implying that liabilities cannot exceed assets in market value.

6. For a successful company that is rapidly expanding, capital outlays would typically be large, possibly leading to negative cash flow from assets. In general, what matters is whether the money is spent wisely, not whether cash flow from assets is positive or negative.

7. It's probably not a good sign for an established company, but it would be fairly ordinary for a start-up, so it depends.

8. For example, if a company were to become more efficient in inventory management, the amount of inventory needed would decline. The same might be true if it becomes better at collecting its receivables. In general, anything that leads to a decline in ending NWC relative to beginning NWC would have this effect. Negative net capital spending would mean more long-lived assets were liquidated than purchased.

9. If a company raises more money from selling stock than it pays in dividends in a particular period, its cash flow to stockholders will be negative. If a company borrows more than it pays in interest, its cash flow to creditors will be negative.

10. The adjustments discussed were purely accounting changes; they had no cash flow or market value consequences unless the new accounting information caused stockholders to revalue the company.

Solutions to Questions and Problems

NOTE: All end-of-chapter problems were solved using a spreadsheet. Many problems require multiple steps. Due to space and readability constraints, when these intermediate steps are included in this solutions manual, rounding may appear to have occurred. However, the final answer for each problem is found without rounding during any step in the problem.

Basic

1. The balance sheet for the company will look like this:

Balance sheet

Current assets	$2,030	Current liabilities	$1,640
Net fixed assets	9,780	Long-term debt	4,490
		Owners' equity	5,680
Total assets	$11,810	Total liabilities and owners' equity	$11,810

The owners' equity is a plug variable. We know that total assets must equal total liabilities and owners' equity. Total liabilities and owners' equity is the sum of all debt and equity, so if we subtract debt from total liabilities and owners' equity, the remainder must be the equity balance, so:

Owners' equity = Total liabilities and owners' equity – Current liabilities – Long-term debt
Owners' equity = $11,810 – 1,640 – 4,490
Owners' equity = $5,680

Net working capital is current assets minus current liabilities, so:

NWC = Current assets – Current liabilities
NWC = $2,030 – 1,640
NWC = $390

2. The income statement starts with revenues and subtracts costs to arrive at EBIT. We then subtract out interest to get taxable income, and then subtract taxes to arrive at net income. Doing so, we get:

Income Statement	
Sales	$634,000
Costs	328,000
Depreciation	73,000
EBIT	$233,000
Interest	38,000
Taxable income	$195,000
Taxes	68,250
Net income	$126,750

3. The dividends paid plus the addition to retained earnings must equal net income, so:

Net income = Dividends + Addition to retained earnings
Addition to retained earnings = $126,750 – 43,000
Addition to retained earnings = $83,750

4. Earnings per share is the net income divided by the shares outstanding, so:

EPS = Net income / Shares outstanding
EPS = $126,750 / 35,000
EPS = $3.62 per share

And dividends per share are the total dividends paid divided by the shares outstanding, so:

DPS = Dividends / Shares outstanding
DPS = $43,000 / 35,000
DPS = $1.23 per share

5. Using Table 2.3, we can see the marginal tax schedule. The first $50,000 of income is taxed at 15 percent, the next $25,000 is taxed at 25 percent, the next $25,000 is taxed at 34 percent, and the next $143,000 is taxed at 39 percent. So, the total taxes for the company will be:

Taxes = .15($50,000) + .25($25,000) + .34($25,000) + .39($243,000 – 100,000)
Taxes = $78,020

6. The average tax rate is the total taxes paid divided by taxable income, so:

Average tax rate = Total tax / Taxable income
Average tax rate = $78,020 / $243,000
Average tax rate = .3211, or 32.11%

The marginal tax rate is the tax rate on the next dollar of income. The company has net income of $243,000 and the 39 percent tax bracket is applicable to a net income up to $335,000, so the marginal tax rate is 39 percent.

7. To calculate the OCF, we first need to construct an income statement. The income statement starts with revenues and subtracts costs to arrive at EBIT. We then subtract out interest to get taxable income, and then subtract taxes to arrive at net income. Doing so, we get:

Income Statement	
Sales	$38,530
Costs	12,750
Depreciation	2,550
EBIT	$23,230
Interest	1,850
Taxable income	$21,380
Taxes (35%)	7,483
Net income	$13.897

Now we can calculate the OCF, which is:

OCF = EBIT + Depreciation – Taxes
OCF = $23,230 + 2,550 – 7,483
OCF = $18,297

8. Net capital spending is the increase in fixed assets, plus depreciation. Using this relationship, we find:

Net capital spending = NFA_{end}– NFA_{beg} + Depreciation
Net capital spending = $2,134,000 – 1,975,000 + 325,000
Net capital spending = $484,000

9. The change in net working capital is the end of period net working capital minus the beginning of period net working capital, so:

Change in NWC = NWC_{end} – NWC_{beg}
Change in NWC = (CA_{end} – CL_{end}) – (CA_{beg} – CL_{beg})
Change in NWC = ($1,685 – 1,305) – (1,530 – 1,270)
Change in NWC = $120

10. The cash flow to creditors is the interest paid, minus any net new borrowing, so:

Cash flow to creditors = Interest paid – Net new borrowing
Cash flow to creditors = Interest paid – (LTD_{end} – LTD_{beg})
Cash flow to creditors = $102,800 – ($1,551,000 – 1,410,000)
Cash flow to creditors = –$38,200

11. The cash flow to stockholders is the dividends paid minus any new equity raised. So, the cash flow to stockholders is: (Note that APIS is the additional paid-in surplus.)

Cash flow to stockholders = Dividends paid – Net new equity
Cash flow to stockholders = Dividends paid – [($Common_{end}$ + $APIS_{end}$) – ($Common_{beg}$ + $APIS_{beg}$)]
Cash flow to stockholders = $148,500 – [($148,000 + 2,618,000) – ($130,000 + 2,332,000)]
Cash flow to stockholders = –$155,500

12. We know that cash flow from assets is equal to cash flow to creditors plus cash flow to stockholders. So, cash flow from assets is:

Cash flow from assets = Cash flow to creditors + Cash flow to stockholders
Cash flow from assets = –$38,200 – 155,500
Cash flow from assets = –$193,700

We also know that cash flow from assets is equal to the operating cash flow minus the change in net working capital and the net capital spending. We can use this relationship to find the operating cash flow. Doing so, we find:

Cash flow from assets = OCF – Change in NWC – Net capital spending
–$193,700 = OCF – (–$115,000) – (705,000)
OCF = –$193,700 – 115,000 + 705,000
OCF = $396,300

Intermediate

13. To find the book value of current assets, we use: NWC = CA – CL. Rearranging to solve for current assets, we get:

CA = NWC + CL = $220,000 + 850,000 = $1,070,000

The market value of current assets and fixed assets is given, so:

Book value CA	= $1,070,000	NWC	= $1,050,000
Book value NFA	= $3,300,000	Market value NFA	= $4,800,000
Book value assets	= $4,370,000	Total	= $5,850,000

14. *a.* To calculate the OCF, we first need to construct an income statement. The income statement starts with revenues and subtracts costs to arrive at EBIT. We then subtract out interest to get taxable income, and then subtract taxes to arrive at net income. Doing so, we get:

Income Statement	
Sales	$173,000
Costs	91,400
Other Expenses	5,100
Depreciation	12,100
EBIT	$64,400
Interest	8,900
Taxable income	$55,500
Taxes	21,090
Net income	$34,410

Dividends	$9,700
Addition to retained earnings	24,710

Dividends paid plus addition to retained earnings must equal net income, so:

Net income = Dividends + Addition to retained earnings
Addition to retained earnings = $34,410 – 9,700
Addition to retained earnings = $24,710

So, the operating cash flow is:

OCF = EBIT + Depreciation – Taxes
OCF = $64,400 + 12,100 – 21,090
OCF = $55,410

b. The cash flow to creditors is the interest paid, minus any new borrowing. Since the company redeemed long-term debt, the net new borrowing is negative. So, the cash flow to creditors is:

Cash flow to creditors = Interest paid – Net new borrowing
Cash flow to creditors = $8,900 – (–$4,000)
Cash flow to creditors = $12,900

c. The cash flow to stockholders is the dividends paid minus any new equity. So, the cash flow to stockholders is:

Cash flow to stockholders = Dividends paid – Net new equity
Cash flow to stockholders = $9,700 – 2,900
Cash flow to stockholders = $6,800

d. In this case, to find the addition to NWC, we need to find the cash flow from assets. We can then use the cash flow from assets equation to find the change in NWC. We know that cash flow from assets is equal to cash flow to creditors plus cash flow to stockholders. So, cash flow from assets is:

Cash flow from assets = Cash flow to creditors + Cash flow to stockholders
Cash flow from assets = $12,900 + 6,800
Cash flow from assets = $19,700

Net capital spending is equal to depreciation plus the increase in fixed assets, so:

Net capital spending = Depreciation + Increase in fixed assets
Net capital spending = $12,100 + 23,140
Net capital spending = $35,240

Now we can use the cash flow from assets equation to find the change in NWC. Doing so, we find:

Cash flow from assets = OCF – Change in NWC – Net capital spending
$19,700 = $55,410 – Change in NWC – $35,240
Change in NWC = $470

15. Here we need to work the income statement backward. Starting with net income, we know that net income is:

Net income = Dividends + Addition to retained earnings
Net income = $2,170 + 3,500
Net income = $5,670

Net income is also the taxable income, minus the taxable income times the tax rate, or:

Net income = Taxable income – (Taxable income)(Tax rate)
Net income = Taxable income(1 – Tax rate)

We can rearrange this equation and solve for the taxable income as:

Taxable income = Net income / (1 – Tax rate)
Taxable income = $5,670 / (1 – .40)
Taxable income = $9,450

EBIT minus interest equals taxable income, so rearranging this relationship, we find:

EBIT = Taxable income + Interest
EBIT = $9,450 + 1,980
EBIT = $11,430

Now that we have the EBIT, we know that sales minus costs minus depreciation equals EBIT. Solving this equation for EBIT, we find:

EBIT = Sales – Costs – Depreciation
$11,430 = $67,000 – 49,200 – Depreciation
Depreciation = $6,370

16. We can fill in the balance sheet with the numbers we are given. The balance sheet will be:

Balance Sheet

Cash	$197,000	Accounts payable	$288,000
Accounts receivable	265,000	Notes payable	194,000
Inventory	563,000	Current liabilities	$482,000
Current assets	$1,025,000	Long-term debt	1,490,000
		Total liabilities	$2,072,000
Tangible net fixed assets	$5,150,000		
Intangible net fixed assets	863,000	Common stock	??
		Accumulated retained earnings	4,586,000
Total assets	$7,038,000	Total liabilities & owners' equity	$7,038,000

Total liabilities and owners' equity is:

TL & OE = CL + LTD + Common stock + Retained earnings

Solving for this equation for common stock gives us:

Common stock =$7,038,000 – 4,586,000 – 2,072,000
Common stock = $380,000

17. Owners' equity is the maximum of total assets minus total liabilities, or zero. Although the book value of owners' equity can be negative, the market value of owners' equity cannot be negative, so:

Owners' equity = Max [(TA – TL), 0]

a. If total assets are $9,300, the owners' equity is:

Owners' equity = Max[($9,300 – 8,400), 0]
Owners' equity = $900

b. If total assets are $6,900, the owners' equity is:

Owners' equity = Max[($6,900 – 8,400), 0]
Owners' equity = $0

18. *a.* Using Table 2.3, we can see the marginal tax schedule. For Corporation Growth, the first $50,000 of income is taxed at 15 percent, the next $25,000 is taxed at 25 percent, and the next $1,500 is taxed at 34 percent. So, the total taxes for the company will be:

$\text{Taxes}_{\text{Growth}}$ = .15($50,000) + .25($25,000) + .34($1,500)
$\text{Taxes}_{\text{Growth}}$ = $14,260

For Corporation Income, the first $50,000 of income is taxed at 15 percent, the next $25,000 is taxed at 25 percent, the next $25,000 is taxed at 34 percent, the next $235,000 is taxed at 39 percent, and the next $7,315,000 is taxed at 34 percent. So, the total taxes for the company will be:

$\text{Taxes}_{\text{Income}}$ = .15($50,000) + .25($25,000) + .34($25,000) + .39($235,000)
+ .34($7,315,000)
$\text{Taxes}_{\text{Income}}$ = $2,601,000

b. The marginal tax rate is the tax rate on the next $1 of earnings. Each firm has a marginal tax rate of 34% on the next $10,000 of taxable income, despite their different average tax rates, so both firms will pay an additional $3,400 in taxes.

19. *a.* The income statement starts with revenues and subtracts costs to arrive at EBIT. We then subtract interest to get taxable income, and then subtract taxes to arrive at net income. Doing so, we get:

Income Statement	
Sales	$2,350,000
Cost of goods sold	1,925,000
Admin expenses	530,000
Depreciation	420,000
EBIT	$ 105,000
Interest	245,000
Taxable income	–$140,000
Taxes (35%)	0
Net income	–$140,000

The taxes are zero since we are ignoring any carryback or carryforward provisions.

b. The operating cash flow for the year was:

OCF = EBIT + Depreciation – Taxes
OCF = $105,000 + 420,000 – 0
OCF = $525,000

c. Net income was negative because of the tax deductibility of depreciation and interest expense. However, the actual cash flow from operations was positive because depreciation is a non-cash expense and interest is a financing, not an operating, expense.

20. A firm can still pay out dividends if net income is negative; it just has to be sure there is sufficient cash flow to make the dividend payments. The assumptions made in the question are:

Change in NWC = Net capital spending = Net new equity = 0

To find the new long-term debt, we first need to find the cash flow from assets. The cash flow from assets is:

Cash flow from assets = OCF – Change in NWC – Net capital spending
Cash flow from assets = $525,000 – 0 – 0
Cash flow from assets = $525,000

We can also find the cash flow to stockholders, which is:

Cash flow to stockholders = Dividends – Net new equity
Cash flow to stockholders = $395,000 – 0
Cash flow to stockholders = $395,000

Now we can use the cash flow from assets equation to find the cash flow to creditors. Doing so, we get:

Cash flow from assets = Cash flow to creditors + Cash flow to stockholders
$525,000 = Cash flow to creditors + $395,000
Cash flow to creditors = $130,000

Now we can use the cash flow to creditors equation to find:

Cash flow to creditors = Interest – Net new long-term debt
\$130,000 = \$245,000 – Net new long-term debt
Net new long-term debt = \$115,000

21. *a.* To calculate the OCF, we first need to construct an income statement. The income statement starts with revenues and subtracts costs to arrive at EBIT. We then subtract out interest to get taxable income, and then subtract taxes to arrive at net income. Doing so, we get:

Income Statement

Sales	\$28,476
Cost of goods sold	20,136
Depreciation	3,408
EBIT	\$ 4,932
Interest	497
Taxable income	\$ 4,435
Taxes (40%)	1,774
Net income	\$ 2,661

b. The operating cash flow for the year was:

OCF = EBIT + Depreciation – Taxes
OCF = \$4,932 + 3,408 – 1,774
OCF = \$6,566

c. To calculate the cash flow from assets, we also need the change in net working capital and net capital spending. The change in net working capital was:

Change in NWC = $NWC_{end} - NWC_{beg}$
Change in NWC = $(CA_{end} - CL_{end}) - (CA_{beg} - CL_{beg})$
Change in NWC = (\$4,234 – 2,981) – (\$3,528 – 3,110)
Change in NWC = \$835

And the net capital spending was:

Net capital spending = $NFA_{end} - NFA_{beg}$ + Depreciation
Net capital spending = \$22,608 – 19,872 + 3,408
Net capital spending = \$6,144

So, the cash flow from assets was:

Cash flow from assets = OCF – Change in NWC – Net capital spending
Cash flow from assets = \$6,566 – 835 – 6,144
Cash flow from assets = –\$413

The cash flow from assets can be positive or negative, since it represents whether the firm raised funds or distributed funds on a net basis. In this problem, even though net income and OCF are positive, the firm invested heavily in fixed assets and net working capital; it had to raise a net \$413 in funds from its stockholders and creditors to make these investments.

d. The cash flow to creditors was:

Cash flow to creditors = Interest – Net new LTD
Cash flow to creditors = $497 – 0
Cash flow to creditors = $497

Rearranging the cash flow from assets equation, we can calculate the cash flow to stockholders as:

Cash flow from assets = Cash flow to stockholders + Cash flow to creditors
–$413 = Cash flow to stockholders + $497
Cash flow to stockholders = –$910

Now we can use the cash flow to stockholders equation to find the net new equity as:

Cash flow to stockholders = Dividends – Net new equity
–$910 = $739 – Net new equity
Net new equity = $1,649

The firm had positive earnings in an accounting sense (NI > 0) and had positive cash flow from operations. The firm invested $835 in new net working capital and $6,144 in new fixed assets. The firm had to raise $413 from its stakeholders to support this new investment. It accomplished this by raising $1,649 in the form of new equity. After paying out $739 in the form of dividends to shareholders and $497 in the form of interest to creditors, $413 was left to just meet the firm's cash flow needs for investment.

22. *a.* To calculate owners' equity, we first need total liabilities and owners' equity. From the balance sheet relationship we know that this is equal to total assets. We are given the necessary information to calculate total assets. Total assets are current assets plus fixed assets, so:

Total assets = Current assets + Fixed assets = Total liabilities and owners' equity

For 2015, we get:

Total assets = $2,718 + 12,602
Total assets = $15,320

Now, we can solve for owners' equity as:

Total liabilities and owners' equity = Current liabilities + Long-term debt + Owners' equity
$15,320 = $1,174 + 6,873 + Owners' equity
Owners' equity = $7,273

For 2016, we get:

Total assets = $2,881 + 13,175
Total assets = $16,056

Now we can solve for owners' equity as:

Total liabilities and owners' equity = Current liabilities + Long-term debt + Owners' equity
$16,056 = $1,726 + 8,019 + Owners' equity
Owners' equity = $6,311

b. The change in net working capital was:

Change in NWC = $NWC_{end} – NWC_{beg}$
Change in NWC = $(CA_{end} – CL_{end}) – (CA_{beg} – CL_{beg})$
Change in NWC = ($2,881 – 1,726) – ($2,718 – 1,174)
Change in NWC = –$389

c. To find the amount of fixed assets the company sold, we need to find the net capital spending. The net capital spending was:

Net capital spending = $NFA_{end} – NFA_{beg}$ + Depreciation
Net capital spending = $13,175 – 12,602 + 3,434
Net capital spending = $4,007

To find the fixed assets sold, we can also calculate net capital spending as:

Net capital spending = Fixed assets bought – Fixed assets sold
$4,007 = $7,160 – Fixed assets sold
Fixed assets sold = $3,153

To calculate the cash flow from assets, we first need to calculate the operating cash flow. For the operating cash flow, we need the income statement. So, the income statement for the year is:

Income Statement

Sales	$40,664
Costs	20,393
Depreciation	3,434
EBIT	$16,837
Interest	638
Taxable income	$16,199
Taxes (40%)	6,480
Net income	$ 9,719

Now we can calculate the operating cash flow, which is:

OCF = EBIT + Depreciation – Taxes
OCF = $16,837 + 3,434 – 6,480
OCF = $13,791

And the cash flow from assets is:

Cash flow from assets = OCF – Change in NWC – Net capital spending.
Cash flow from assets = $13,791 – (–$389) – 4,007
Cash flow from assets = $10,173

d. To find the cash flow to creditors, we first need to find the net new borrowing. The net new borrowing is the difference between the ending long-term debt and the beginning long-term debt, so:

Net new borrowing = $\text{LTD}_{\text{Ending}} - \text{LTD}_{\text{Beginnning}}$
Net new borrowing = $8,019 – 6,873
Net new borrowing = $1,146

So, the cash flow to creditors is:

Cash flow to creditors = Interest – Net new borrowing
Cash flow to creditors = $638 – 1,146
Cash flow to creditors = –$508

The net new borrowing is also the difference between the debt issued and the debt retired. We know the amount the company issued during the year, so we can find the amount the company retired. The amount of debt retired was:

Net new borrowing = Debt issued – Debt retired
$1,146 = $2,155 – Debt retired
Debt retired = $1,009

23. To construct the cash flow identity, we will begin with cash flow from assets. Cash flow from assets is:

Cash flow from assets = OCF – Change in NWC – Net capital spending

So, the operating cash flow is:

OCF = EBIT + Depreciation – Taxes
OCF = $103,562 + 69,038 – 27,703
OCF = $144,897

Next, we will calculate the change in net working capital, which is:

Change in NWC = $\text{NWC}_{\text{end}} - \text{NWC}_{\text{beg}}$
Change in NWC = $(\text{CA}_{\text{end}} - \text{CL}_{\text{end}}) - (\text{CA}_{\text{beg}} - \text{CL}_{\text{beg}})$
Change in NWC = ($73,571 – 34,127) – ($58,325 – 30,352)
Change in NWC = $11,471

Now, we can calculate the capital spending. The capital spending is:

Net capital spending = $\text{NFA}_{\text{end}} - \text{NFA}_{\text{beg}}$ + Depreciation
Net capital spending = $513,980 – 435,670 + 69,038
Net capital spending = $147,348

Now, we have the cash flow from assets, which is:

Cash flow from assets = OCF – Change in NWC – Net capital spending
Cash flow from assets = $144,897 – 11,471 – 147,348
Cash flow from assets = –$13,922

The company's assets generated an outflow of $13,922. The cash flow from operations was $144,897, and the company spent $11,471 on net working capital and $147,348 on fixed assets.

The cash flow to creditors is:

Cash flow to creditors = Interest paid – New long-term debt
Cash flow to creditors = Interest paid – (Long-term debt$_{end}$ – Long-term debt$_{beg}$)
Cash flow to creditors = $24,410 – ($192,300 – 173,100)
Cash flow to creditors = $5,210

The cash flow to stockholders is a little trickier in this problem. First, we need to calculate the new equity sold. The equity balance increased during the year. The only way to increase the equity balance is retained earnings or sell equity. To calculate the new equity sold, we can use the following equation:

New equity = Ending equity – Beginning equity – Addition to retained earnings
New equity = $361,124 – 290,543 – 35,249
New equity = $35,332

What happened was the equity account increased by $70,581. Of this increase, $35,249 came from addition to retained earnings, so the remainder must have been the sale of new equity. Now we can calculate the cash flow to stockholders as:

Cash flow to stockholders = Dividends paid – Net new equity
Cash flow to stockholders = $16,200 – 35,332
Cash flow to stockholders = –$19,132

The company paid $5,210 to creditors and raised $19,132 from stockholders.

Finally, the cash flow identity is:

Cash flow from assets	=	Cash flow to creditors	+	Cash flow to stockholders
–$13,922	=	$5,210	+	–$19,132

The cash flow identity balances, which is what we expect.

Challenge

24. Net capital spending

$$\begin{aligned} &= NFA_{end} - NFA_{beg} + \text{Depreciation} \\ &= (NFA_{end} - NFA_{beg}) + (\text{Depreciation} + AD_{beg}) - AD_{beg} \\ &= (NFA_{end} - NFA_{beg}) + AD_{end} - AD_{beg} \\ &= (NFA_{end} + AD_{end}) - (NFA_{beg} + AD_{beg}) \\ &= FA_{end} - FA_{beg} \end{aligned}$$

25. *a.* The tax bubble causes average tax rates to catch up to marginal tax rates, thus eliminating the tax advantage of low marginal rates for high-income corporations.

b. Taxes = .15($50K) + .25($25K) + .34($25K) + .39($235K) = $113.9K

Average tax rate = $113.9K / $335K = 34%

The marginal tax rate on the next dollar of income is 34 percent.

For corporate taxable income levels of $335K to $10M, average tax rates are equal to marginal tax rates.

Taxes = .34($10M) + .35($5M) + .38($3.333M) = $6,416,667

Average tax rate = $6,416,667 / $18,333,334 = 35%

The marginal tax rate on the next dollar of income is 35 percent. For corporate taxable income levels over $18,333,334, average tax rates are again equal to marginal tax rates.

c. At the end of the "tax bubble", the marginal tax rate on the next dollar should equal the average tax rate on all preceding dollars. Since the upper threshold of the bubble bracket is now $200,000, the marginal tax rate on dollar $200,001 should be 34 percent, and the total tax paid on the first $200,000 should be $200,000(.34). So, we get:

Taxes	= .34($200K) = $68K = .15($50K) + .25($25K) + .34($25K) + X($100K)
X($100K)	= $68K – 22.25K = $45.75K
X	= $45.75K / $100K
X	= 45.75%