14. Calculating Total Cash Flows.

Greene Co. shows the following information on its 2008 income statement:

Sales = $138,000
Costs = $71,500
Other expenses = $4,100
Depreciation expense = $10,100
Interest expense = $7,900
Taxes = $17,760
Dividends = $5,400.

In addition, you're told that the firm issued $2,500 in new equity during 2008, and redeemed $3,800 in outstanding long-term debt.

a. What is the 2008 operating cash flow?
b. What is the 2008 cash flow to creditors?
c. What is the 2008 cash flow to stockholders?
d. If net fixed assets increased by $17,400 during the year, what was the addition to NWC?

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	$138,000
Costs	71,500
Other Expenses	4,100
Depreciation	10,100
EBIT	$52,300
Interest	7,900
Taxable income	$44,400
Taxes	17,760
Net income	$26,640
Dividends	$5,400
Addition to retained earnings	21,240

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

Net income = Dividends + Addition to retained earnings

Addition to retained earnings = $26,640 – 5,400

Addition to retained earnings = $21,240

So, the operating cash flow is:

OCF = EBIT + Depreciation – Taxes

OCF = $52,300 + 10,100 – 17,760

OCF = $44,640

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

Cash flow to creditors = Interest paid – Net new borrowing

Cash flow to creditors = $7,900 – (–$3,800)

Cash flow to creditors = $11,700

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 = $5,400 – 2,500

Cash flow to stockholders = $2,900

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 = $11,700 + 2,900

Cash flow from assets = $14,600

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 = $10,100 + 17,400

Net capital spending = $27,500

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

$14,600 = $44,640 – Change in NWC – $27,500

Change in NWC = $2,540

21. Calculating Cash Flows.

Titan Football Manufacturing had the following operating results for 2008:

Sales = $18,450
Costs = $13,610
Depreciation expense = $2,420
Interest expense = $260
Dividends = $450.
At the beginning of the year:
Net fixed assets: $12,100
Current Assets: $3,020
Current Liabilities: $2,260
At the end of the year:
Net fixed assets: $12,700
Current Assets: $4,690
Current Liabilities: $2,720
The tax rate for 2008 was 35 percent
What is the net income for 2008?
What is the operating cash flow for 2008?
What is the cash flow from assets for 2008? Is this possible? Explain.
If no new debt was issued during the year, what is the cash flow to creditors? What is the cash flow to stockholders? Explain and interpret the positive and negative signs of your answers in (A) through (D).

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	$18,450
Cost of goods sold	13,610
Depreciation	2,420
EBIT	$2,420
Interest	260
Taxable income	$2,160
Taxes (35%)	756
Net income	$1,404

The operating cash flow for the year was:

OCF = EBIT + Depreciation – Taxes

OCF = $2,420 + 2,420 – 756 = $4,084

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 = ($4,690 – 2,720) – ($3,020 – 2,260)

Change in NWC = $1,210

And the net capital spending was:

Net capital spending = $NFA_{end} - NFA_{beg}$ + Depreciation

Net capital spending = $12,700 – 12,100 + 2,420

Net capital spending = $3,020

So, the cash flow from assets was:

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

Cash flow from assets = $4,084 – 1,210 – 3,020

Cash flow from assets = –$146

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 both fixed assets and net working capital; it had to raise a net $146 in funds from its stockholders and creditors to make these investments.

The cash flow from creditors was:

Cash flow to creditors = Interest – Net new LTD

Cash flow to creditors = $260 – 0

Cash flow to creditors = $260

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

–$146 = Cash flow to stockholders + $260

Cash flow to stockholders = –$406

23. Cash Flow Identity.

Find Your Way Back, Inc., reported the following financial statements for the last two years. Construct the cash flow identity for the company.

2008 Income Statement	
Sales	706,500
Cost of goods sold	342,531
Selling & administrative	155,916
Depreciation	68,220
EBIT	139,833
Interest	24,120
EBT	115,713
Taxes	40,499
Net income	75,214
Dividends	12,000
Addition to retained earnings	63,214

FIND YOUR WAY BACK, INC.			
Balance Sheet as of December 31, 2007			
Cash	16,650	Accounts payable	11,880
Accounts receivable	23,742	Notes payable	18,135
Inventory	17,242	Current liabilities	30,015
Current assets	57,634		
		Long-term debt	171,000
Net fixed assets	430,533	Owners' equity	287,152
Total assets	488,167	Total liabilities and owners' equity	488,167

FIND YOUR WAY BACK, INC.			
Balance Sheet as of December 31, 2008			
Cash	17,883	Accounts payable	13,140
Accounts receivable	26,374	Notes payable	20,583
Inventory	28,443	Current liabilities	33,723
Current assets	72,700		
		Long-term debt	190,000
Net fixed assets	507,888	Owners' equity	356,865
Total assets	580,588	Total liabilities and owners' equity	580,588

To construct the cash flow identity, we will begin 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 = $139,833 + 68,220 – 40,499
OCF = $167,554

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

Change in NWC = $NWC_{end} - NWC_{beg}$
Change in NWC = $(CA_{end} - CL_{end}) - (CA_{beg} - CL_{beg})$
Change in NWC = ($72,700 – 33,723) – ($57,634 – 30,015)
Change in NWC = $11,358

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

Net capital spending = $NFA_{end} - NFA_{beg}$ + Depreciation
Net capital spending = $507,888 – 430,533 + 68,220
Net capital spending = $145,575

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 = $167,554 – 11,358 – 145,575
Cash flow from assets = $10,621

The company generated $10,621 in cash from its assets. The cash flow from operations was $167,554, and the company spent $11,358 on net working capital and $145,575 in 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 = $24,120 – ($190,000 – 171,000)
Cash flow to creditors = $5,120

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 to add addition to 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 = $356,865 – 287,152 – 63,214
New equity = $6,499

What happened was the equity account increased by $69,713. $63,214 of this 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 = $12,000 – 6,499
Cash flow to stockholders = $5,501

The company paid $5,120 to creditors and $5,501 to stockholders.

Finally, the cash flow identity is:

Cash flow from assets = Cash flow to creditors + Cash flow to stockholders
$10,621 = $5,120 + $5,501

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