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CHAPTER 2 – REVIEWING FINANCIAL STATEMENTS

questions

LG2-1 1. List and describe the four major financial statements.

The four basic financial statements are:
1. The **balance sheet** reports a firm's assets, liabilities, and equity at a particular point in time.
2. The **income statement** shows the total revenues that a firm earns and the total expenses the firm incurs to generate those revenues over a specific period of time—generally one year.
3. The **statement of cash flows** shows the firm's cash flows over a given period of time. This statement reports the amounts of cash the firm generated and distributed during a particular time period. The bottom line on the statement of cash flows—the difference between cash sources and uses—equals the change in cash and marketable securities on the firm's balance sheet from the previous year's balance.
4. The **statement of retained earnings** provides additional details about changes in retained earnings during a reporting period. This financial statement reconciles net income earned during a given period minus any cash dividends paid within that period to the change in retained earnings between the beginning and ending of the period.

LG2-1 2. On which of the four major financial statements (balance sheet, income statement, statement of cash flows, or statement of retained earnings) would you find the following items?

a. earnings before taxes - income statement
b. net plant and equipment - balance sheet
c. increase in fixed assets - statement of cash flows
d. gross profits - income statement
e. balance of retained earnings, December 31, 20xx - statement of retained earnings and balance sheet
f. common stock and paid-in surplus - balance sheet
g. net cash flow from investing activities - statement of cash flows
h. accrued wages and taxes – balance sheet
i. increase in inventory - statement of cash flows

LG2-1 3. What is the difference between current liabilities and long-term debt?

Current liabilities constitute the firm's obligations due within one year, including accrued wages and taxes, accounts payable, and notes payable. Long-term debt includes long-term loans and bonds with maturities of more than one year.

LG2-1 4. How does the choice of accounting method used to record fixed asset depreciation affect management of the balance sheet?

Firm managers can choose the accounting method they use to record depreciation against their fixed assets. Two choices include the straight-line method and the modified accelerated cost recovery system (MACRS). Companies often calculate depreciation using MACRS when they figure the firm's taxes and the straight-line method when reporting income to the firm's

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stockholders. The MACRS method accelerates deprecation, which results in higher depreciation expenses, lower taxable income, and lower taxes in the early years of a project's life. The straight-line method results in lower depreciation expenses, but also results in higher taxes in the early years of a project's life. Firms seeking to lower their cash outflows from tax payments will favor the MACRS depreciation method.

LG2-1 5. What is bonus depreciation? How did the Tax Cuts and Jobs Act of 2017 temporarily extend and modify bonus depreciation?

Since 2001, businesses have had the ability to immediately deduct a percentage of the acquisition cost of qualifying assets as "bonus depreciation." This additional depreciation deduction was allowed to encourage business investment. However, bonus depreciation was a temporary provision; the rate would have been 50 percent in 2017, 40 percent in 2018, and 30 percent in 2019, before phasing out in 2020. The Tax Cuts and Jobs Act of 2017 extended and modified bonus depreciation, allowing businesses to immediately deduct 100 percent of the cost of eligible property in the year it is placed in service, through 2022. The amount of allowable bonus depreciation will then be phased down over four years: 80 percent will be allowed for property placed in service in 2023, 60 percent in 2024, 40 percent in 2025, and 20 percent in 2026. MACRS or straight-line depreciation is applied to any costs that do not qualify for bonus depreciation.

LG2-1 6. What are the costs and benefits of holding liquid securities on a firm's balance sheet?

The more liquid assets a firm holds, the less likely the firm will be to experience financial distress. However, liquid assets generate little or no profits for a firm. For example, cash is the most liquid of all assets, but it earns little, if any, return for the firm. In contrast, fixed assets are illiquid, but provide the means to generate revenue. Thus, managers must consider the trade-off between the advantages of liquidity on the balance sheet and the disadvantages of having money sit idle rather than generating profits.

LG2-2 7. Why can the book value and market value of a firm differ?

A firm's balance sheet shows its book (or historical cost) value based on Generally Accepted Accounting Principles (GAAP). Under GAAP, assets appear on the balance sheet at what the firm paid for them, regardless of what assets might be worth today if the firm were to sell them. Inflation and market forces make many assets worth more now than they were when the firm bought them. So in most cases, book values differ widely from the market values for the same assets—the amount that the assets would fetch if the firm actually sold them. For the firm's current assets—those that mature within a year—the book value and market value of any particular asset will remain very close. For example, the balance sheet lists cash and marketable securities at their market value. Similarly, firms acquire accounts receivable and inventory and then convert these short-term assets into cash fairly quickly, so the book value of these assets is generally close to their market value.

LG2-2 8. From a firm manager's or investor's point of view, which is more important—the book value of a firm or the market value of the firm?

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Balance sheet assets are listed at historical cost. Managers would thus see little relation between the total asset value listed on the balance sheet and the current market value of the firm's assets. Similarly, the stockowners' equity listed on the balance sheet generally differs from the true market value of the equity—in this case, the market value may be higher or lower than the value listed on the firm's accounting books. So, financial managers and investors often find that balance sheet values are not always the most relevant numbers.

LG2-3 9. How did the Tax Cuts and Jobs Act of 2017 change corporate tax laws?

The Tax Cuts and Jobs Act (TCJA) of 2017 is the most recent revision of corporate tax laws and represents one of the most significant changes in more than 30 years. The Act permanently lowers corporate taxes from a progressive schedule that saw tax rates as high as 35 percent to a flat 21 percent starting in 2018.

LG2-3 10. What is the difference between an average tax rate and a marginal tax rate?

A firm can figure the average tax rate as the percentage of each dollar of taxable income that the firm pays in taxes. From your economics classes, you can probably guess that the firm's marginal tax rate is the amount of additional taxes a firm must pay out for every additional dollar of taxable income it earns.

LG2-3 11. How did the Tax Cuts and Jobs Act of 2017 change the tax deductibility of corporate interest in debt?

The Tax Cuts and Jobs Act of 2017 contains a new limitation on the deductibility of net interest expense (interest expense minus interest income) that exceeds 30 percent of a firm's "adjusted taxable income" starting in 2018. For tax years beginning before January 1, 2022, "adjusted taxable income" is measured as a business' EBITDA. For subsequent tax years, "adjusted taxable income" is measured as EBIT, no longer including an add-back for depreciation and amortization. Thus, beginning in 2022, the new limitation will become more severe. Prior corporate tax laws generally allowed full deduction of interest paid or accrued by businesses.

LG2-3 12. How does the payment of interest on debt affect the amount of taxes the firm must pay?

Corporate interest payments appear on the balance sheet as an expense item, so we deduct the allowable portion of interest payments from operating income when the firm calculates taxable income. But, any dividends paid by corporations to their shareholders are not tax deductible. This is one factor that encourages managers to finance projects with debt financing rather than to sell more stock. Suppose one firm uses mainly debt financing and another firm, with identical operations, uses mainly equity financing. The equity-financed firm will have very little interest expense to deduct for tax purposes. Thus, it will have higher taxable income and pay more taxes than the debt-financed firm. The debt-financed firm will pay fewer taxes and be able to pay more of its operating income to asset funders, i.e., its bondholders and stockholders. So, as long as interest on debt is under the 30 percent allowable cap for tax deduction, even stockholders prefer that firms finance assets primarily with debt rather than with stock.

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LG2-4 13. The income statement is prepared using GAAP. How does this affect the reported revenue and expense measures listed on the balance sheet?

Company accountants must prepare firm income statements following GAAP principles. GAAP procedures require that the firm recognize revenue at the time of sale, but sometimes the company receives the cash before or after the time of sale. Likewise, GAAP counsels the firm to show production and other expenses on the balance sheet as the sales of those goods take place. So production and other expenses associated with a particular product's sale only appear on the income statement (for example, cost of goods sold and depreciation) when that product sells. Of course, just as with the revenue recognition, actual cash outflows incurred with production may occur at a very different point in time—usually much earlier than GAAP principles allow the firm to formally recognize the expenses. Further, income statements contain several non-cash entries, the largest of which is depreciation. Depreciation attempts to capture the non-cash expense incurred as fixed assets deteriorate from the time of purchase to the point when those assets must be replaced. Let's illustrate the effect of depreciation: Suppose a firm purchases a machine for $100,000. The machine has an expected life of five years and at the end of those five years, the machine will have no expected salvage value. The firm lays out a $100,000 cash outflow at the time of purchase. But the entire $100,000 does not appear on the income statement in the year that the firm purchases the machine—in accounting terms, the machine is not *expensed* in the year of purchase. Rather, if the firm's accounting department uses the straight-line depreciation method, it deducts only $100,000/5, or $20,000, each year as an expense. This $20,000 equipment expense is not a cash outflow for the firm. The person in charge of buying the machine knows that the cash flow occurred at the time of purchase—and it totaled $100,000 rather than $20,000. So, figures shown on an income statement may not represent the actual cash inflows and outflows for a firm during a particular period.

LG2-4 14. Why do financial managers and investors find cash flows to be more important than accounting profit?

Financial managers and investors are far more interested in actual cash flows than they are in the somewhat artificial, backward-looking accounting profit listed on the income statement. This is a very important distinction between the accounting point of view and the finance point of view. Finance professionals know that the firm needs cash, not accounting profit, to pay the firm's obligations as they come due, to fund the firm's operations and growth, and to compensate the firm's ultimate owners: its shareholders. Thus, the statement of cash flows is a financial statement that shows the firm's cash flows over a given period of time. This statement reports the amounts of cash that the firm generated and distributed during a particular time period.

LG2-5 15. Which of the following activities result in an increase (decrease) in a firm's cash?

a. Decrease fixed assets – increase in cash
b. Decrease accounts payable – decrease in cash
c. Pay dividends – decrease in cash
d. Sell common stock – increase in cash
e. Decrease accounts receivable – increase in cash

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f. Increase notes payable – increase in cash

LG2-5 16. What is the difference between cash flows from operating activities, cash flows from investing activities, and cash flows from financing activities?

Cash flows from operations are those cash inflows and outflows that result directly from producing and selling the firm's products. These cash flows include: net income, depreciation, and working capital accounts other than cash and operations-related short-term debt. Cash flows from investing activities are cash flows associated with buying or selling of fixed or other long-term assets. This section of the statement of cash flows shows cash inflows and outflows from long-term investing activities—most significantly the firm's investment in fixed assets. Cash flows from financing activities are cash flows that result from debt and equity financing transactions. These include raising cash by: issuing short-term debt, issuing long-term debt, issuing stock, using cash to pay dividends, using cash to pay off debt, and using cash to buy back stock.

LG2-5 17. What are free cash flows for a firm? What does it mean when a firm's free cash flow is negative?

Free cash flows are the cash flows available to pay the firm's stockholders and debtholders after the firm has made the necessary working capital investments, fixed asset investments, and developed the necessary new products to sustain the firm's ongoing operations. If free cash flow is negative, the firm's operations produce no cash flows available for investors.

LG2-6 18. What is earnings management?

Managers and financial analysts have recognized for years that firms use considerable latitude in using accounting rules to manage their reported earnings in a wide variety of contexts. Indeed, within the GAAP framework, firms can "smooth" earnings. That is, firms often take steps to over- or understate earnings at various times. Managers may choose to smooth earnings to show investors that firm assets are growing steadily. Similarly, one firm may be using straight-line depreciation for its fixed assets, while another is using a modified accelerated cost recovery method (MACRS), which causes depreciation to accrue quickly. If the firm uses MACRS accounting methods, its managers write fixed asset values down quickly; assets will thus have lower book value than if the firm used straight line depreciation methods. This process of controlling a firm's earnings is called earnings management.

LG2-6 19. What does the Sarbanes-Oxley Act require of firm managers?

The Sarbanes-Oxley Act, passed in June 2002, requires public companies to ensure that their corporate boards' audit committees have considerable experience applying generally accepted accounting principles (GAAP) for financial statements. The Act also requires that any firm's senior management must sign off on the financial statements of the firm, certifying the statements as accurate and representative of the firm's financial condition during the period covered. If a firm's board of directors or senior managers fails to comply with Sarbanes-Oxley (SOX), the firm may be delisted from stock exchanges.

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problems

basic problems LG2-1

2-1 **Balance Sheet** You are evaluating the balance sheet for Goodman's Bees Corporation. From the balance sheet you find the following balances: cash and marketable securities = $400,000, accounts receivable = $1,200,000, inventory = $2,100,000, accrued wages and taxes = $500,000, accounts payable = $800,000, and notes payable = $600,000. Calculate Goodman Bees' net working capital.

Net working capital = Current assets - Current liabilities.
Goodman's Bees' current assets =

Cash and marketable securities	=	$400,000
Accounts receivable	=	1,200,000
Inventory	=	2,100,000
Total current assets		$3,700,000

and current liabilities =

Accrued wages and taxes	=	$500,000
Accounts payable	=	800,000
Notes payable	=	600,000
Total current liabilities		$1,900,000

So the firm's net working capital was $1,800,000 ($3,700,000 - $1,900,000).

LG2-1

2-2 **Balance Sheet** Casello Mowing & Landscaping's year-end 2021 balance sheet lists current assets of $435,200, fixed assets of $550,800, current liabilities of $416,600, and long-term debt of $314,500. Calculate Casello's total stockholders' equity.

Recall the balance sheet identity in Equation 2-1: Assets = Liabilities + Equity. Rearranging this equation: Equity = Assets – Liabilities. Thus, the balance sheets would appear as follows:

Assets	Book value	**Liabilities and Equity**	Book value
Current assets	$ 435,200	Current liabilities	$ 416,600
Fixed assets	550,800	Long-term debt	314,500
		Stockholders' equity	254,900
Total	$ 986,000	Total	$ 986,000

LG2-1

2-3 **Income Statement** The Fitness Studio, Inc.'s 2021 income statement lists the following income and expenses: EBITDA = $650,000, EBIT = $538,000, interest expense = $63,000, and net income = $435,000. Calculate the 2021 taxes reported on the income statement.

With $650,000 of EBITDA, The Fitness Studio is allowed to deduct $195,000 ($650,000 x 30 percent) in net interest expense. The recorded interest expense of $63,000 is under this limit and is thus all tax deductible.

EBIT	$538,000
Interest expense	-63,000
EBT	$ 475,000

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Taxes	-40,000
Net income	$435,000

LG2-1 2-4 **Income Statement** The Fitness Studio, Inc.'s 2021 income statement lists the following income and expenses: EBITDA = $923,000, EBIT = $773,500, interest expense = $100,000, and taxes = $234,500. The firm has no preferred stock outstanding and 100,000 shares of common stock outstanding. Calculate the 2018 earnings per share.

With $923,000 of EBITDA, The Fitness Studio is allowed to deduct $276,900 ($923,000 x 30 percent) in net interest expense. The recorded interest expense of $100,000 is under this limit and is thus all tax deductible.

EBIT	$773,500
Interest expense	-100,000
EBT	$ 673,500
Taxes	-234,500
Net income	$439,000

Thus,

$$\text{Earnings per share (EPS)} = \frac{\$439{,}000}{100{,}000 \text{ shares}} = \$4.39 \text{ per share}$$

LG2-1 2-5 **Income Statement** Consider a firm with an EBIT of $850,000. The firm finances its assets with $2,500,000 debt (costing 7.5 percent and is all tax deductible) and 400,000 shares of stock selling at $5.00 per share. To reduce firm's risk associated with this financial leverage, the firm is considering reducing its debt by $1,000,000 by selling an additional 200,000 shares of stock. The firm's tax rate is 21 percent. The change in capital structure will have no effect on the operations of the firm. Thus, EBIT will remain at $850,000. Calculate the change in the firm's EPS from this change in capital structure.

The EPS before and after this change in capital structure is illustrated below:

	Before capital structure change	After capital structure change
EBIT	$850,000	$850,000
Less: Interest	($2,500,000 x 0.075) 187,500	($1,500,000 x 0.075) 112,500
EBT	662,500	737,500
Less: Taxes (21%)	139,125	154,875
Net income	$523,375	$582,625
Divide by # of shares	400,000	600,000
EPS	$1.3084	$0.9710

The change in capital structure would decrease the stockholders EPS by $0.3374.

LG2-1 2-6 **Income Statement** Consider a firm with an EBIT of $550,000. The firm finances its assets with $1,000,000 debt (costing 5.5 percent and is all tax deductible) and 200,000 shares of stock selling at $12.00 per share. The firm is considering increasing its debt by $900,000, using the proceeds to buy back 75,000 shares of stock. The firm's tax rate is 21 percent. The change in capital structure will have no effect on the operations of the firm. Thus, EBIT will remain at $550,000. Calculate the change in the firm's EPS from this change in capital structure.

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The EPS before and after this change in capital structure is illustrated below:

	Before capital structure change	After capital structure change
EBIT	$550,000	$550,000
Less: Interest	($1,000,000 x 0.055) 55,000	($1,900,000 x 0.055) 104,500
EBT	495,000	445,500
Less: Taxes (21%)	103,950	93,555
Net income	$391,050	$351,945
Divide by # of shares	200,000	125,000
EPS	$1.9552	$2.8156

The change in capital structure increases the stockholders EPS by $0.8604.

LG2-3 2-7 **Corporate Taxes** Oakdale Fashions, Inc., 2021 Income Statement is reported below.

	2021
Net sales (all credit)	$565,000
Less: Cost of goods sold	215,000
Gross profits	350,000
Less: Other operating expenses	90,000
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	260,000
Less: Depreciation and amortization	15,000
Earnings before interest and taxes (EBIT)	245,000
Less: Interest	80,000
Earnings before taxes (EBT)	165,000
Less: Taxes	
Net income	$

Determine the firm's 2021 tax liability, net income, average tax rate, and marginal tax rate. *(LG2-3)*

With $260,000 of EBITDA, Oakdale Fashions is allowed to deduct only $78,000 ($260,000 x 30 percent) of its $80,000 in net interest expense. Thus,

Taxable income = EBIT – Allowable interest deduction
= $245,000 - $78,000 = $167,000

Tax liability = 0.21x Taxable income
= 0.21($167,000) = $35,070

The 30 percent cap on the allowable interest deduction results in an increase in Oakdale Fashions' tax liability of $420 (0.21($80,000 - $78,000)).

Net income = EBT – Tax liability
= $165,000 - $35,070 = $129,930

The *average* tax rate for Oakdale Fashions Inc. comes to:

$$\text{Average tax rate} = \frac{\$35,070}{\$167,000} = 21.00\%$$

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If Oakdale Fashions, Inc. earned $1 more of taxable income, it would pay 21 cents (its tax rate of 21 percent) more in taxes. Thus, the firm's marginal tax rate is 21 percent.

LG2-3 2-8 **Corporate Taxes** Everybody's Fitness 2021 Income Statement is reported below (in millions of dollars).

	2021
Net sales (all credit)	$885
Less: Cost of goods sold	440
Gross profits	445
Less: Other operating expenses	215
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	230
Less: Depreciation and amortization	52
Earnings before interest and taxes (EBIT)	178
Less: Interest	75
Earnings before taxes (EBT)	103
Less: Taxes	
Net income	$

Determine the firm's 2021 tax liability, net income, average tax rate, and marginal tax rate. *(LG2-3)*

With $230,000,000 of EBITDA, Everybody's Fitness is allowed to deduct only $69,000,000 ($230,000,000 x 30 percent) of its $75,000,000 in net interest expense. Thus,

Taxable income = EBIT – Allowable interest deduction
= $178,000,000 - $69,000,000 = $109,000,000

Tax liability = 0.21x Taxable income
= 0.21($109,000,000) = $22,890,000

The 30 percent cap on the allowable interest deduction results in an increase in Everybody's Fitness' tax liability of $1,260,000 (0.21($75,000,000 - $69,000,000)).

Net income = EBT – Tax liability
= $103,000,000 - $22,890,000 = $80,110,000

The *average* tax rate for Everybody's Fitness comes to:

$$\text{Average tax rate} = \frac{\$22,890,000}{\$109,000,000} = 21.00\%$$

If Oakdale Fashions, Inc. earned $1 more of taxable income, it would pay 21 cents (its tax rate of 21 percent) more in taxes. Thus, the firm's marginal tax rate is 21 percent.

LG2-3 2-9 **Corporate Taxes** Hunt Taxidermy, Inc., is concerned about the taxes paid by the company in 2021. In addition to $42.4 million of taxable income, the firm received $2,975,000 of interest

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on state-issued bonds and $1,000,000 of dividends on common stock it owns in Oakdale Fashions, Inc. Calculate Hunt Taxidermy's tax liability, average tax rate, and marginal tax rate.

In this case, interest on the state-issued bonds is not taxable and should not be included in taxable income. Further, the first 50 percent of the dividends received from Oakdale Fashions is not taxable. Thus, only 50 percent of the dividends received are taxed, so:

Taxable income = $42,400,000 + (0.5)$1,000,000 = $42,900,000

Now Hunt Taxidermy's tax liability will be:

Tax liability = 0.21 ($42,900,000) = $9,009,000

The $1,000,000 of dividend income increased Hunt Taxidermy's tax liability by $105,000 (0.5 x $1,000,000 x 0.21). Hunt Taxidermy's resulting average tax rate is:

Average tax rage = $9,009,000/$42,900,000 = 21.00%

Finally, if Hunt Taxidermy earned $1 more of taxable income, it would pay 21 cents (based upon its tax rate of 21 percent) more in taxes. Thus, the firm's marginal tax rate is 21 percent.

LG2-3 2-10 **Corporate Taxes** Chapman & Power Inc., is concerned about the taxes paid by the company in 2021. In addition to $135,000,000 of taxable income, the firm received $15,500,000 of interest on state-issued bonds and $12,000,000 of dividends on common stock it owns in Hunt Taxidermy. Calculate Chapman & Power's tax liability, average tax rate, and marginal tax rate.

In this case, interest on the state-issued bonds is not taxable and should not be included in taxable income. Further, the first 50 percent of the dividends received from Hunt Taxidermy is not taxable. Thus, only 50 percent of the dividends received are taxed, so:

Taxable income = $135,000,000 + (0.5)$12,000,000 = $141,000,000

Now Hunt Taxidermy's tax liability will be:

Tax liability = 0.21 ($141,000,000) = $29,610,000

The $12,000,000 of dividend income increased Chapman & Power's tax liability by $1,260,000 (0.5 x $12,000,000 x 0.21). Hunt Taxidermy's resulting average tax rate is:

Average tax rage = $29,610,000/$141,000,000 = 21.00%

Finally, if Chapman & Power earned $1 more of taxable income, it would pay 21 cents (based upon its tax rate of 21 percent) more in taxes. Thus, the firm's marginal tax rate is 21 percent.

LG2-4 2-11 **Statement of Cash Flows** Ramakrishnan Inc. reported 2021 net income of $15 million and depreciation of $2,650,000. The top part of Ramakrishnan, Inc.'s 2021 and 2020 balance sheets is listed below (in millions of dollars).

Current assets:	2021	2020	Current liabilities:	2021	2020
Cash and marketable securities	$ 20	$ 15	Accrued wages and taxes	$ 19	$ 18
Accounts receivable	84	75	Accounts payable	51	45
Inventory	121	110	Notes payable	45	40

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Total	$225	$200	Total	$115	$103

Calculate the 2021 net cash flow from operating activities for Ramakrishnan, Inc.

Cash Flows from Operating Activities

Net income	$15,000,000
Additions (sources of cash):	
Depreciation	2,650,000
Increase in accrued wages and taxes	1,000,000
Increase in accounts payable	6,000,000
Subtractions (uses of cash):	
Increase in accounts receivable	-9,000,000
Increase in inventory	-11,000,000
Net cash flow from operating activities:	$4,650,000

LG2-4 2-12 **Statement of Cash Flows** In 2021, Usher Sports Shop had cash flows from investing activities of -$4,364,000 and cash flows from financing activities of -$5,880,000. The balance in the firm's cash account was $1,615,000 at the beginning of 2021 and $1,742,000 at the end of the year. Calculate Usher Sports Shop's cash flow from operations for 2021.

Net change in cash and marketable securities = $1,742,000 - $1,615,000 = $127,000

Cash flows from operating activities	= $10,371,000
Cash flows from investing activities	= - 4,364,000
Cash flows from financing activities	= - 5,880,000
Net change in cash and marketable securities	= $127,000

LG2-5 2-13 **Free Cash Flow** You are considering an investment in Fields and Struthers, Inc., and want to evaluate the firm's free cash flow. From the income statement, you see that Fields and Struthers earned an EBIT of $62 million, had a tax rate of 30 percent, and its depreciation expense was $5 million. Fields and Struthers' gross fixed assets increased by $32 million from 2020 to 2020. The firm's current assets increased by $20 million and spontaneous current liabilities increased by $12 million. Calculate Fields and Struthers' NOPAT, operating cash flow, investment in operating capital, and free cash flow for 2021.

Fields and Struthers' NOPAT was:

NOPAT = EBIT(1 – Tax rate) = $62m.(1 – 0.21) = $48.98m.

Operating cash flow for 2021 was:

OCF = NOPAT + Depreciation
= $48.98m. + $5m. = $53.98m.

Investment in operating capital for 2021 was:

IOC = ΔGross fixed assets + ΔNet operating working capital
= $32m. + ($20m. - $12m.) = $40 m.

Accordingly, Fields and Struthers' free cash flow for 2021 was:

FCF = Operating cash flow – Investment in operating capital
= $53.98m. - $40m. = $13.98m.

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In other words, in 2021, Fields and Struthers had cash flows of $13.98 million available to pay its stockholders and debtholders.

LG2-5 2-14 **Free Cash Flow** Tater and Pepper Corp. reported free cash flows for 2021 of $39.1 million and investment in operating capital of $22.1 million. Tater and Pepper incurred $13.6 million in depreciation expense and paid $28.9 million in taxes on EBIT in 2021. Calculate Tater and Pepper's 2021 EBIT.

Tater and Pepper's free cash flow for 2021 was:

FCF = Operating cash flow – Investment in operating capital
$39.1m. = Operating cash flow - $22.1m.

So, operating cash flow = $39.1m. + $22.1m. = $61.2m.

Tater and Pepper's operating cash flow was:

OCF = EBIT(1 – Tax rate) + Depreciation = EBIT – Taxes on EBIT + Depreciation
$61.2m. = EBIT – $28.9m. + $13.6m.

So, EBIT = $61.2m. + $28.9m. - $13.6m. = $76.5m.

LG2-1 2-15 **Statement of Retained Earnings** Mr. Husker's Tuxedos, Corp. began the year 2021 with $256 million in retained earnings. The firm earned net income of $33 million in 2021 and paid dividends of $5 million to its preferred stockholders and $10 million to its common stockholders. What is the year-end 2021 balance in retained earnings for Mr. Husker's Tuxedos?

The statement of retained earnings for 2021 is as follows:

Balance of retained earnings, December 31, 2020		$256m.
Plus: Net income for 2021		33m.
Less: Cash dividends paid		
Preferred stock	$5m.	
Common stock	10m.	
Total cash dividends paid		15m.
Balance of retained earnings, December 31, 2021		$274m.

LG2-1 2-16 **Statement of Retained Earnings** Use the following information to find dividends paid to common stockholders during 2021.

Balance of retained earnings, December 31, 2020		$462m.
Plus: Net income for 2021		15m.
Less: Cash dividends paid		
Preferred stock	$1m.	
Common stock	6m.	
Total cash dividends paid		7m.
Balance of retained earnings, December 31, 2021		$470m.

Total cash dividends paid = $470m. - $15m. - $462m. = -$7m. Thus, common stock dividends paid = $7m. - $1m = $6m.

intermediate 2-17 **Balance Sheet** Mikey's Bar and Grill has total assets of $15 million of which $5 million

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problems are current assets. Cash makes up 10 percent of the current assets and accounts receivable makes up another 40 percent of current assets. Mikey's gross plant and equipment has a book value of $11.5 million and other long-term assets have a book value of $500,000. Using this information, what is the

LG2-1 balance of inventory and the balance of depreciation on Mikey's Bar and Grill's balance sheet?

		(in millions)	
Current assets:			
Cash and marketable securities		$ 0.5	(0.1 x $5)
Accounts receivable		2.0	(0.4 x $5)
Inventory	step 1.	2.5	($5 - $0.5 - $2.0)
Total		$5.0	
Fixed assets:			
Gross plant and equipment		$11.5	
Less: Depreciation	step 4.	2.0	($11.5 - $9.5)
Net plant and equipment	step 3.	$9.5	($10.0 - $0.5)
Other long-term assets		0.5	
Total	step 2.	$10.0	($15.0 - $5.0)
Total assets		$15.0	

LG2-1 2-18 **Balance Sheet** Sophie's Tobacco Shop has total assets of $91.8 million. Fifty percent of these assets are financed with debt of which $28.9 million is current liabilities. The firm has no preferred stock, but the balance in common stock and paid-in surplus is $20.4 million. Using this information what is the balance for long-term debt and retained earnings on Sophie's Tobacco Shop's balance sheet?

		(in millions)	
Total current liabilities		$28.9	
Long-term debt:	step 3.	17.0	(= $45.9 - $28.9)
Total debt:	step 2.	$45.9	(= 0.5 x $91.8)
Stockholders' equity:			
Preferred stock		$ 0.0	
Common stock and paid-in surplus (20 million shares)		20.4	
Retained earnings	step 5.	25.5	(= $45.9 - $20.4)
Total	step 4	$45.9	(= $91.8 - $45.9)
Total liabilities and equity	step 1.	$91.8	(= Total Assets)

LG2-2 2-19 **Market Value versus Book Value** Muffin's Masonry, Inc's balance sheet lists net fixed asset as $14 million. The fixed assets could currently be sold for $19 million. Muffin's current balance sheet shows current liabilities of $5.5 million and net working capital of $4.5 million. If all the current accounts were liquidated today, the company would receive $7.25 million cash after paying the $5.5 million in current liabilities. What is the book value of Muffin's Masonry's assets today? What is the market value of these assets?

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		BOOK VALUE		MARKET VALUE
Assets				
Current assets	Step 1.	$10m.	Step 3.	$12.75m.
Fixed assets		14m.		19.00m.
Total	Step 2.	$24m.	Step 4.	$31.75m.

Step 1. Net working capital (book value) = Current assets (book value) – Current liabilities (book value)
= $4.5m. = Current assets (book value) - $5.5m. => Current assets (book value) = $4.5m. + $5.5m. = $10m.
Step 2. Total assets (book value) = $10m. + $14m. = $24m.
Step 3. Net working capital (market value) = Current assets (market value) – Current liabilities (market value)
= $7.25m. = Current assets (market value) - $5.5m. => Current assets (market value) = $7.25m. + $5.5m. = $12.75m.
Step 4. Total assets (market value) = $12.75m. + $19m. = $31.75m.

LG2-2 2-20 **Market Value versus Book Value** Ava's SpinBall Corp. lists fixed assets of $12 million on its balance sheet. The firm's fixed assets have recently been appraised at $16 million. Ava's SpinBall Corp.'s balance sheet also lists current assets at $5 million. Current assets were appraised at $6 million. Current liabilities' book and market values stand at $3 million and the firm's book and market values of long-term debt are $7 million. Calculate the book and market values of the firm's stockholders' equity. Construct the book value and market value balance sheets for Ava's SpinBall Corp. *(LG2)*

Recall the balance sheet identity in Equation 2-1: Assets = Liabilities + Equity. Rearranging this equation: Equity = Assets – Liabilities. Thus, the balance sheets would appear as follows:

	BOOK VALUE	MARKET VALUE		BOOK VALUE	MARKET VALUE
Assets			**Liabilities and Equity**		
Current assets	$ 5m.	$ 6m.	Current liabilities	$ 3m.	$ 3m.
Fixed assets	12m.	16m.	Long-term debt	7m.	7m.
			Stockholders' equity	7m.	12m.
Total	$17m.	$22m.	Total	$17m.	$22m.

LG2-1 2-21 **Debt versus Equity Financing** You are considering a stock investment in one of two firms (NoEquity, Inc., and NoDebt, Inc.), both of which operate in the same industry and have identical EBITDA of $37.7 million and operating income of $32.5 million. NoEquity, Inc., finances its $65 million in assets with $64 million in debt (on which it pays 10 percent interest annually) and $1 million in equity. NoDebt, Inc., finances its $65 million in assets with no debt and $65 million in equity. Both firms pay a tax rate of 21 percent on their taxable income. Calculate the net income and return on asset-funders' investment for the two firms.

With $37.7 million of EBITDA AllDebt Inc., may deduct up to $11.31 million ($37.7 x 30 percent) of interest expense for tax purposes. Thus, AllDebt Inc., is allowed to deduct all of its interest expense.

		NoEquity	NoDebt
Operating income		$32.500m	$32.500m
Less: Interest	($64m. x 0.1)	6.400m	0.000m
Taxable income		$26.100m	$32.500m
Less: Taxes (21%)		5.481m	6.825m
Net income		$20.619m	$25.675m

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Income available for asset funders (= Operating income - Taxes)	$10.379m	$25.675m
Return on asset-funders' investment	$27.019m/$65m = 41.57%	$25.675m/$65m = 39.50%

LG2-1 2-22 **Debt versus Equity Financing** You are considering a stock investment in one of two firms (AllDebt, Inc., and AllEquity, Inc.), both of which operate in the same industry and have identical EBITDA of $14.7 million and operating income of $12.5 million. AllDebt, Inc., finances its $25 million in assets with $24 million in debt (on which it pays 10 percent interest annually) and $1 million in equity. AllEquity, Inc., finances its $25 million in assets with no debt and $25 million in equity. Both firms pay a tax rate of 21 percent on their taxable income. Calculate the income available to pay the asset funders (the debt holders and stockholders) and resulting return on asset-funders' investment for the two firms.

With $14.7 million of EBITDA AllDebt Inc., may deduct up to $4.41 million ($14.7 x 30 percent) of interest expense for tax purposes. Thus, AllDebt Inc., is allowed to deduct all of its interest expense.

		AllDebt	AllEquity
Operating income		$12.500m	$12.500m
Less: Interest	($24m. x 0.1)	2.400m	0.000m
Taxable income		$10.100m	$12.500m
Less: Taxes (21%)		2.121m	2.625m
Net income		$7.979m	$9.875m
Income available for asset funders (= Operating income - Taxes)		$10.379m	$9.875m
Return on asset-funders' investment		$10.379m./$25m. = 41.516%	$9.875m./$25m. = 39.500%

LG2-1 2-23 **Income Statement** You have been given the following information for Corky's Bedding Corp.:

a. Net sales = $11,250,000.
b. Cost of goods sold = $7,500,000.
c. Other operating expenses = $250,000.
d. Addition to retained earnings = $1,000,000.
e. Dividends paid to preferred and common stockholders = $495,000.
f. Interest expense = $850,000, all of which is tax deductible.

The firm's tax rate is 35 percent. Calculate the depreciation expense for Corky's Bedding Corp.

Net sales		$11,250,000
Less: Cost of goods sold		7,500,000
Gross profits	Step 4.	$3,750,000
Less: Other operating expenses		250,000
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	Step 5.	$3,500,000
Less: Depreciation	Step 6.	350,000
Earnings before interest and taxes (EBIT)	Step 3.	$3,150,000
Less: Interest		850,000
Earnings before taxes (EBT)	Step 2.	$2,300,000
Less: Taxes (21%)		

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Net income	Step 1.	$1,817,000
Less: Common and preferred stock dividends		$ 817,000
Addition to retained earnings		$1,000,000

Step 1. Net income = Common and preferred stock dividends + Addition to retained earnings = $817,000 + $1,000,000 = $1,817,000
Step 2. EBT (1 – Tax rate) = Net income => EBT = Net income/(1 – Tax rate) = $1,817,000/(1 - 0.21) = $2,300,000
Step 3. EBIT – Interest = EBT => EBIT = EBT + Interest = $2,300,000 + $850,000 = $3,150,000
Step 4. Gross profits = Net sales – Cost of goods sold = $11,250,000 – 7,500,000 = $3,750,000
Step 5. EBITDA = Gross profits – Other operating expenses = $3,750,000 – 250,000 = $3,500,000
Step 6. EBITDA – Depreciation = EBIT => Depreciation = EBITDA – EBIT = $3,500,000 - $3,150,000 = $350,000

LG2-1 2-24 **Income Statement** You have been given the following information for Moore's HoneyBee Corp.:
a. Net sales = $32,000,000.
b. Gross profits = $18,700,000.
c. Other operating expenses = $2,500,000.
d. Addition to retained earnings = $4,700,000.
e. Dividends paid to preferred and common stockholders = $2,900,000.
f. Depreciation expense = $2,800,000.

The firm's tax rate is 35 percent. The firm's interest expense is all tax deductible. Calculate the cost of goods sold and the interest expense for Moore's HoneyBee Corp.

Net sales		$32,000,000
Less: Cost of goods sold	Step 1.	13,300,000
Gross profits		$18,700,000
Less: Other operating expenses		2,500,000
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	Step 4.	$16,200,000
Less: Depreciation		2,800,000
Earnings before interest and taxes (EBIT)	Step 5.	$13,400,000
Less: Interest	Step 6.	1,700,000
Earnings before taxes (EBT)	Step 3.	$11,700,000
Less: Taxes (21%)		
Net income	Step 2.	$ 9,243,000
Less: Common and preferred stock dividends		$2,900,000
Addition to retained earnings		$6,343,000

Step 1. Net sales - Cost of goods sold = Gross profits => Cost of goods sold = Net sales – Gross Profits = $32,000,000 – $18,700,000 = $13,300,000
Step 2. Net income = Common and preferred stock dividends + Addition to retained earnings = $2,900,000 + $6,343,000 = $9,243,000
Step 3. EBT (1 – Tax rate) = Net income => EBT = Net income/(1 – Tax rate) = $9,243,000/(1 - 0.21) = $11,700,000
Step 4. EBITDA = Gross profits – Other operating expenses = $18,700,000 – 2,500,000 = $16,200,000
Step 5. EBITDA – Depreciation = EBIT = $16,200,000 - $2,800,000 = $13,400,000
Step 6. EBIT – Interest = EBT => Interest = EBIT - EBT = $13,400,000 - $11,7000,000 = $1,700,000

LG2-1 2-25 **Income Statement** Consider a firm with an EBITDA of $1,100,000 and an EBIT of $1,000,000. The firm finances its assets with $4,500,000 debt (costing 8 percent, all of which is

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tax deductible) and 200,000 shares of stock selling at $16.00 per share. To reduce risk associated with this financial leverage, the firm is considering reducing its debt by $2,500,000 by selling additional shares of stock. The firm's tax rate is 21 percent. The change in capital structure will have no effect on the operations of the firm. Thus, EBIT will remain at $1,000,000. Calculate the change in the firm's EPS from this change in capital structure.

With $1,100,000 of EBITDA, the firm may deduct up to $330,000 ($1,100,000 x 30 percent) of interest expense for tax purposes. Thus, given the current capital structure, the firm may deduct only $330,000 of its $360,000 interest expense ($4,500,000 x 0.08) for tax purposes. Thus,

Taxable income = EBIT – Allowable interest deduction
= $1,000,000 - $330,000 = $670,000

Tax liability = 0.21x Taxable income
= 0.21($670,000) = $140,700

With the proposed change in capital structure, the firm may deduct all of its $160,000 ($2,000,000 x 0.08) interest expense for tax purposes.

Number of shares of stock that must be sold to raise $2,500,000:
$2,500,000/$16 = 156,250
=> number of shares of stock outstanding after refinancing = 200,000 + 156,250 = 356,250

The EPS before and after this change in capital structure is illustrated below:

	Before capital structure change		After capital structure change	
EBIT		$1,000,000		$1,000,000
Less: Interest	($4,500,000 x 0.08)	360,000	($2,000,000 x 0.08)	160,000
EBT		640,000		840,000
Less: Taxes (21%)		140,700		176,400
Net income		$499,300		$663,600
Divide by # of shares		200,000		356,250
EPS		$2.4965		$1.8627

The change in capital structure will result in a decrease in the stockholders EPS by $0.6338.

LG2-1 2-26 **Income Statement** Consider a firm with an EBITDA of $13,00,000 and an EBIT of $10,500,000. The firm finances its assets with $50,000,000 debt (costing 6.5 percent) and 10,000,000 shares of stock selling at $10.00 per share. The firm is considering increasing its debt by $25,000,000, using the proceeds to buy back shares of stock. The firm's tax rate is 21 percent. The change in capital structure will have no effect on the operations of the firm. Thus, EBIT will remain at $10,500,000. Calculate the change in the firm's EPS from this change in capital structure.

With $13,000,000 of EBITDA, the firm may deduct up to $3,900,000 ($13,000,000 x 30 percent) of interest expense for tax purposes. Thus, given the current capital structure, the firm may deduct the full $3,250,000 ($50,000,000 x 0.065) of its interest expense for tax purposes. With the proposed change in capital structure, the firm may deduct only $3,900,000 of its $4,875,000 interest expense ($75,000,000 x 0.065) for tax purposes. Thus,

Taxable income = EBIT – Allowable interest deduction
= $10,500,000 - $3,900,000 = $6,600,000

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Tax liability = 0.21x Taxable income
= 0.21($6,600,000) = $1,386,000

Number of shares of stock that can be repurchased with $25,000,000:
$25,000,000/$10 = 2,500,000
=> number of shares of stock outstanding after refinancing = 10,000,000 – 2,500,000 = 7,500,000

The EPS before and after this change in capital structure is illustrated below:

	Before capital structure change		After capital structure change	
EBIT		$10,500,000		$10,500,000
Less: Interest	($50,000,000 x 0.065)	3,250,000	($75,000,000 x 0.065)	4,875,000
EBT		7,250,000		5,625,000
Less: Taxes (21%)		1,522,500		1,386,000
Net income		$5,727,500		$4,239,000
Divide by # of shares		10,000,000		7,500,000
EPS		$0.57275		$0.56520

The change in capital structure decreases the stockholders EPS by $0.00755. While interest on debt is tax deductible up to 30 percent of EBITDA, in this case the change in the capital structure causes the firm to hit the tax deductible cap. The tax benefits of additional debt do not apply once the firm hits the cap, causing debt to no longer be an attractive option from stockholders viewpoint.

LG2-3 2-27 **Corporate Taxes** The Dakota Corporation had a 2021 taxable income of $33,365,000 from operations after all operating costs but before (1) interest charges of $8,500,000, all of which is tax deductible; (2) dividends received of $750,000; (3) dividends paid of $5,250,000; and (4) income taxes. The firm's EBITDA is $tax rate is 21 percent.

a. Calculate Dakota's income tax liability.

The first 50 percent of the dividends received is not taxable. Thus, only 50 percent of the dividends received are taxed, so:
Taxable income = $33,365,000 - $8,500,000 + (0.5)$750,000 = $25,240,000

Now Dakota Corp.'s tax liability will be:
Tax liability = 0.21 ($25,240,000) = $5,300,400

b. What are Dakota's average and marginal tax rates on taxable income?

Dakota Corp.'s average tax rate is:
Average tax rate = $5,300,400/$25,240,000 = 21.00%

Finally, if Dakota Corp earned $1 more of taxable income, it would pay 21 cents (based on its tax rate of 21 percent) more in taxes. Thus, the marginal tax rate is 21 percent.

LG2-3 2-26 **Corporate Taxes** Suppose that in addition to $17.85 million of taxable income, Texas Taco, Inc., received $1,105,000 of interest on state-issued bonds and $760,000 of dividends on common stock it owns in ArizonaTaco, Inc.

a. Calculate Texas Taco's income tax liability.

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Interest on the state-issued bonds is not taxable and should not be included in taxable income. Further, the first 50 percent of the dividends received from ArizonaTaco is not taxable. Thus, only 50 percent of the dividends received are taxed, so:

Taxable income = $17,850,000 + (0.5)$760,000 = $18,230,000

Texas Taco's tax liability will be:

Tax liability = 0.21 ($18,230,000) = $3,828,300

b. What are Texas Taco's average and marginal tax rates on taxable income?

Texas Taco's resulting average tax rate is:

Average tax rate = $3,828,300/$18,230,000= 21.00%

Finally, if Texas Taco earned $1 more of taxable income, it would pay 21 cents (based upon its tax rate of 21 percent) more in taxes. Thus, the marginal tax rate is 21 percent.

LG2-5 2-29 **Statement of Cash Flows** Use the balance sheet and income statement below to construct a statement of cash flows for Clancy's Dog Biscuit Corporation.

Clancy's Dog Biscuit Corporation
Balance Sheet as of December 31, 2021and 2020
(in millions of dollars)

	2021	2020		2021	2020
Assets			**Liabilities and Equity**		
Current assets:			Current liabilities :		
Cash and marketable securities	$ 5	$ 5	Accrued wages and taxes	$ 10	$ 6
Accounts receivable	20	19	Accounts payable	16	15
Inventory	36	29	Notes payable	14	13
Total	$ 61	$ 53	Total	$ 40	$ 34
Fixed assets:			Long-term debt:	$ 57	$ 53
Gross plant and equipment	$106	$ 88			
Less: Accumulated depreciation	15	11	Stockholders' equity:		
Net plant and equipment	$ 91	$ 77	Preferred stock (2 million shares)	$ 2	$ 2
Other long-term assets	15	15	Common stock and paid-in surplus (5 million shares)	11	11
Total	$106	$ 92	Retained earnings	57	45
			Total	$ 70	$ 58
Total assets	$167	$145	Total liabilities and equity	$167	$145

Clancy's Dog Biscuit Corporation
Income Statement for Years Ending December 31, 2021 and 2020
(in millions of dollars)

	2021	2020
Net sales	$ 76	$ 80
Less: Cost of goods sold	38	35
Gross profits	$ 38	$ 45
Less: Other operating expenses	6	5
Earnings before interest, taxes, depreciation, and		

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amortization (EBITDA)	$ 32	$ 40
Less: Depreciation	4	4
Earnings before interest and taxes (EBIT)	$ 28	$ 36
Less: Interest	5	5
Earnings before taxes (EBT)	$ 23	$ 31
Less: Taxes	5	7
Net income	$18	$24
Less: Preferred stock dividends	$ 1	$ 1
Net income available to common stockholders	$17	$23
Less: Common stock dividends	5	5
Addition to retained earnings	$12	$18
Per (common) share data:		
Earnings per share (EPS)	$3.00	$4.20
Dividends per share (DPS)	$1.00	$1.00
Book value per share (BVPS)	$13.60	$11.20
Market value (price) per share (MVPS)	$14.25	$14.60

SOLUTION: **Statement of Cash Flows for Year Ending December 31, 2021**
(in millions of dollars)

	2021
A. Cash flows from operating activities	
Net income	$18
Additions (sources of cash):	
Depreciation	4
Increase accrued wages and taxes	4
Increase in accounts payable	1
Subtractions (uses of cash):	
Increase in accounts receivable	-1
Increase in inventory	-7
Net cash flow from operating activities:	$19
B. Cash flows from investing activities	
Subtractions:	
Increase fixed assets	-$18
Increase in other long-term assets	0
Net cash flow from investing activities:	-$18
C. Cash flows from financing activities	
Additions:	
Increase in notes payable	$ 1
Increase in long-term debt	4
Increase in common and preferred stock	0
Subtractions:	
Preferred stock dividends	-1
Common stock dividends	-5
Net cash flow from financing activities:	- $1
D. Net change in cash and marketable securities	**-$ 0**

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LG2-5 2-30 **Statement of Cash Flows** Use the balance sheet and income statement below to construct a statement of cash flows for Valium's Medical Supply Corporation.

Valium's Medical Supply Corporation
Balance Sheet as of December 31, 2021 and 2020
(in thousands of dollars)

	2021	2020		2021	2020
Assets			**Liabilities and Equity**		
Current assets:			Current liabilities :		
Cash and marketable securities	$ 74	$ 73	Accrued wages and taxes	$ 58	$ 45
Accounts receivable	199	189	Accounts payable	159	145
Inventory	322	291	Notes payable	131	131
Total	$ 595	$ 553	Total	$ 348	$ 321
Fixed assets:			Long-term debt:	$ 565	$549
Gross plant and equipment	$1,084	$ 886			
Less: Accumulated depreciation	153	116	Stockholders' equity:		
Net plant and equipment	$ 931	$ 770	Preferred stock (6 thousand shares)	$ 6	$ 6
Other long-term assets	130	130	Common stock and paid-in surplus (100 thousand shares)	120	120
Total	$1,061	$ 900	Retained earnings	617	457
			Total	$ 743	$ 583
Total assets	$1,656	$1,453	Total liabilities and equity	$1,656	$1,453

Valium's Medical Supply Corporation
Income Statement for Years Ending December 31, 2021 and 2020
(in thousands of dollars)

	2021	2020
Net sales	$ 888	$ 798
Less: Cost of goods sold	387	350
Gross profits	$ 501	$ 448
Less: Other operating expenses	48	42
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	$ 453	$ 406
Less: Depreciation and amortization	37	35
Earnings before interest and taxes (EBIT)	$ 416	$ 371
Less: Interest	46	40
Earnings before taxes (EBT)	$ 370	$ 331
Less: Taxes	78	70
Net income	$ 292	$ 261
Less: Preferred stock dividends	$ 6	$ 6
Net income available to common stockholders	$ 286	$ 255
Less: Common stock dividends	126	126
Addition to retained earnings	$ 160	$ 129

Per (common) share data:

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Earnings per share (EPS)	$2.86	$2.55
Dividends per share (DPS)	$1.26	$1.26
Book value per share (BVPS)	$7.37	$5.77
Market value (price) per share (MVPS)	$8.40	$6.25

SOLUTION:

Statement of Cash Flows for Year Ending December 31, 2021
(in thousands of dollars)

A. Cash flows from operating activities	
Net income	$292
Additions (sources of cash):	
Depreciation and amortization	37
Increase in accrued wages and taxes	13
Increase in accounts payable	14
Subtractions (uses of cash):	
Increase in accounts receivable	-10
Increase in inventory	-31
Net cash flow from operating activities:	$315
B. Cash flows from investing activities	
Subtractions:	
Increase in fixed assets	-$198
Increase in other long-term assets	0
Net cash flow from investing activities:	-$198
C. Cash flows from financing activities	
Additions:	
Increase in notes payable	$ 0
Increase in long-term debt	16
Increase in common and preferred stock	0
Subtractions:	
Preferred stock dividends	- 6
Common stock dividends	-126
Net cash flow from financing activities:	-$116
D. Net change in cash and marketable securities	**$ 1**

LG2-5 2-31 **Statement of Cash Flows** Chris' Outdoor Furniture, Inc., has net cash flows from operating activities for the last year of $340 million. The income statement shows that net income is $315 million and depreciation expense is $46 million. During the year, the change in inventory on the balance sheet was $38 million, change in accrued wages and taxes was $15 million and change in accounts payable was $20 million. At the beginning of the year the balance of accounts receivable was $50 million. Calculate the end-of-year balance for accounts receivable.

A. Cash flows from operating activities	**(in millions)**
Net income	$315
Additions (sources of cash):	
Depreciation	46

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Increase accrued wages and taxes	15	
Increase in accounts payable	20	
Subtractions (uses of cash):		
Increase in accounts receivable	-18	(=$340 - $315 - $46 - $15 - $20 + $38)
Increase in inventory	-38	
Net cash flow from operating activities:	$340	

End-of-year balance for accounts receivable = $50m. + $18m. = $68m.

LG2-5 2-32 **Statement of Cash Flows** Dogs 4 U Corporation has net cash flow from financing activities for the last year of $34 million. The company paid $178 million in dividends last year. During the year, the change in notes payable on the balance sheet was $39 million, and change in common and preferred stock was $0. The end-of-year balance for long-term debt was $315 million. Calculate the beginning-of-year balance for long-term debt.

C. Cash flows from financing activities	**(in millions)**	
Additions:		
Increase in notes payable	$ 39	
Increase in long-term debt	173	(=$34 + $178 - $39)
Increase in common and preferred stock	0	
Subtractions:		
Stock dividends	-178	
Net cash flow from financing activities:	$34	

Beginning-of-year balance for long-term debt = $315m. - $173m = $142m.

LG2-5 2-31 **Free Cash Flow** The 2021 income statement for Duffy's Pest Control shows that depreciation expense was $197 million, EBIT was $440 million, and the tax rate was 21 percent. At the beginning of the year, the balance of gross fixed assets was $1,562 million and net operating working capital was $417 million. At the end of the year, gross fixed assets was $1,803 million. Duffy's free cash flow for the year was $424 million. Calculate the end-of-year balance for net operating working capital.

Duffy's Pest Control's operating cash flow was:

OCF = EBIT(1 – Tax rate) + Depreciation
= ($440m.(1 - 0.21) + $197m.) = $544.6m.

Duffy's Pest Control's free cash flow for 2021 was:

FCF = Operating cash flow – Investment in operating capital
$424m. = $544.6m. - Investment in operating capital
=> Investment in operating capital = $544.6m. - $424m. = $120.6m.

Accordingly, investment in operating capital for 2021 was:

IOC = ΔGross fixed assets + ΔNet operating working capital
$120.6m. = ($1,803m. - $1,562m.) + (Ending net operating working capital - $417m.)
=> Ending net operating working capital = $120.6m. - ($1,803m. - $1,562m.) + $417m. = $296.6m.

LG2-5 2-34 **Free Cash Flow** The 2021 income statement for Egyptian Noise Blasters shows that depreciation expense is $85 million, NOPAT is $246 million. At the end of the year, the balance

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of gross fixed assets was $655 million. The change in net operating working capital during the year was $73 million. Egyptian's free cash flow for the year was $190 million. Calculate the beginning-of-year balance for gross fixed assets.

Egyptian Noise Blasters' operating cash flow was:

OCF = NOPAT + Depreciation =
= ($246m. + $85m.) = $331m.

Egyptian Noise Blasters' free cash flow for 2021 was:

FCF = Operating cash flow – Investment in operating capital
$190m. = $331m. - Investment in operating capital
= > Investment in operating capital = $331m. - $190m. = $141m.

Accordingly, investment in operating capital for 2021 was:

IOC = ΔGross fixed assets + ΔNet operating working capital
$141m. = ($655m. – Beginning of year gross fixed assets) + $73m.
=> Beginning of year gross fixed assets = $655m. - $141m. + $73m. = $587m.

LG2-1 2-35 **Statement of Retained Earnings** Thelma and Louie, Inc., started the year with a balance of retained earnings of $543 million and ended the year with retained earnings of $589 million. The company paid dividends of $35 million to the preferred stockholders and $88 million to common stockholders. Calculate Thelma and Louie's net income for the year.

Statement of Retained Earnings as of December 31, 2021
(in millions of dollars)

Balance of retained earnings, December 31, 2020		$543	
Plus: Net income for 2021		169	(= $589 + $123 - $543)
Less: Cash dividends paid			
Preferred stock	$35		
Common stock	88		
Total cash dividends paid		123	
Balance of retained earnings, December 31, 2021		$589	

LG2-1 2-36 **Statement of Retained Earnings** Jamaica Tours, Inc., started the year with a balance of retained earnings of $1,780 million. The company reported net income for the year of $284 million and paid dividends of $17 million to the preferred stockholders and $59 million to common stockholders. Calculate Jamaica Tour's end-of-year balance in retained earnings.

Statement of Retained Earnings as of December 31, 2018
(in millions of dollars)

Balance of retained earnings, December 31, 2017		$1,780
Plus: Net income for 2018		284
Less: Cash dividends paid		
Preferred stock	$17	
Common stock	59	
Total cash dividends paid		76
Balance of retained earnings, December 31, 2018		$1,988

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advanced problems LG2-1

2-37 **Income Statement** Listed below is the 2021 income statement for Tom and Sue Travels, Inc.

Tom and Sue Travels, Inc.
Income Statement for Year Ending December 31, 2021
(in millions of dollars)

Net sales	$16.500
Less: Cost of goods sold	7.100
Gross profits	9.400
Less: Other operating expenses	3.200
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	6.200
Less: Depreciation	2.900
Earnings before interest and taxes (EBIT)	3.300
Less: Interest	0.950
Earnings before taxes (EBT)	2.350
Less: Taxes	0.495
Net income	$ 1.855

The CEO of Tom and Sue's wants the company to earn a net income of $2.250 million in 2022. Cost of goods sold is expected to be 60 percent of net sales, depreciation and other operating expenses are not expected to change, interest expense is expected to increase to $1.416 million, and the firm's tax rate will be 21 percent. Calculate the net sales needed to produce net income of $2.250 million.

Tom and Sue Travels, Inc.
Income Statement for Year Ending December 31, 2022
(in millions of dollars)

Net sales	Step 5.	$25.910
Less: Cost of goods sold	Step 6.	15.546
Gross profits	Step 4.	10.364
Less: Other operating expenses		3.200
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	Step 3.	7.164
Less: Depreciation		2.900
Earnings before interest and taxes (EBIT)	Step 2.	4.264
Less: Interest		1.416
Earnings before taxes (EBT)	Step 1.	3.214
Less: Taxes		
Net income		$ 2.250

Step 1. EBT (1-t) = Net income = $2.250m = EBT (1 - 0.21) => EBT = $2.250m./(1 - 0.21) = $2.848m.
Step 2. EBIT = EBT + Interest = $2.848m. + $1.416m. = $4.264m.
Step 3. EBITDA = EBIT + Depreciation = $4.264m. + $2.900m. = $7.164m
Step 4. Gross profits = EBITDA + Other operating expenses = $7.164m. + $3.200m. = $10.364m
Step 4. Net sales = Gross profits/(1-Cost of goods sold percent) = $10.364m./(1 - 0.6) = $25.910m.

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Step 5. Cost of goods sold = Net sales – Gross profits = $25.910m. - $10.364 = $15.546m.

LG2-1 2-38 **Income Statement** You have been given the following information for PattyCake's Athletic Wear Corp. for the year 2021:

a. Net sales = $38,250,000.
b. Cost of goods sold = $22,070,000.
c. Other operating expenses = $5,300,000.
d. Addition to retained earnings = $2,195,500.
e. Dividends paid to preferred and common stockholders = $1,912,000.
f. Interest expense = $1,785,000.
g. The firm's tax rate is 21 percent.

In 2022:

h. net sales are expected to increase by $9.75 million.
i. Cost of goods sold is expected to be 60 percent of net sales.
j. Depreciation and other operating expenses are expected to be the same as in 2021.
k. Interest expense is expected to be $2,004,367.
l. The tax rate is expected to be 21 percent of EBT.
m. Dividends paid to preferred and common stockholders will not change.

Calculate the addition to retained earnings expected in 2022.

Income Statement for Year Ending December 31, 2021
(in millions of dollars)

Net sales		$38,250,000
Less: Cost of goods sold		22,070,000
Gross profits		16,180,000
Less: Other operating expenses		5,300,000
Earnings before interest, taxes, depreciation, and amortization (EBITDA)		10,880,000
Less: Depreciation	$10,880,000 - $6,984,367	3,895,633
Earnings before interest and taxes (EBIT)	$5,199,367 + $1,785,000	6,984,367
Less: Interest		1,785,000
Earnings before taxes (EBT)	$4,107,500 / (1 - 0.21)	5,199,367
Less: Taxes		
Net income		$4,107,500
Less: Preferred and common stock dividends		$1,912,000
Addition to retained earnings		$2,195,500

Income Statement for Year Ending December 31, 2022
(in millions of dollars)

Net sales (all credit)	$38,250,000 + $9,750,000	$48,000,000
Less: Cost of goods sold	0.6 x $48,000,000	28,800,000
Gross profits		19,200,000
Less: Other operating expenses		5,300,000

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Earnings before interest, taxes, depreciation, and amortization (EBITDA)	13,900,000
Less: Depreciation	3,895,633
Earnings before interest and taxes (EBIT)	10,004,367
Less: Interest	2,004,367
Earnings before taxes (EBT)	8,000,000
Less: Taxes (21%)	1,680,000
Net income	$6,320,000
Less: Preferred and common stock dividends	$1,912,000
Addition to retained earnings	$4,408,000

LG2-5 2-39 **Free Cash Flow** Rebecky's Flowers 4U, Inc., had free cash flows during 2021 of $43 million, NOPAT of $85 million, and depreciation of $14 million. Using this information, fill in the blanks on Rebecky's balance sheet below.

Rebecky's operating cash flow for 2021 was:

OCF = NOPAT + Depreciation = ($85m. + $14m.) = $99m.

Rebecky's free cash flow was:

FCF = Operating cash flow – Investment in operating capital

$43m. = $99m. - Investment in operating capital

So, Investment in operating capital = $99m. - $43m. = $56m.

IOC = ΔGross fixed assets + ΔNet operating working capital

$56m. = ($333m. - $300m.) + ΔNet operating working capital

=> ΔNet operating working capital = $56m. - ($333m. - $300m.) = $23m.

ΔNet operating working capital = $23m. = ΔCurrent assets - ΔCurrent liabilities

$23m. = ($221m. - $190m.) - ΔCurrent liabilities

=> ΔCurrent liabilities = ($221m. - $190m.) - $23m. = $8m.

=> 2021 Current liabilities = $110m. + $8m. = $118m.

and 2021 Current liabilities = Accrued wages and taxes + Accounts payable + Notes payable

$118m. = $17m. + Accounts payable + $45m.

=> Accounts payable = $118m. - $17m. - $45m. = $56m.

=> Long-term debt = $550m. - $118m. - $237m. = $195m.

Rebecky's Flowers 4U, Inc.
Balance Sheet as of December 31, 2021 and 2020
(in millions of dollars)

	2021	2020		2021	2020
Assets			**Liabilities and Equity**		
Current assets:			Current liabilities :		
Cash and marketable securities	$ 28	$ 25	Accrued wages and taxes	$ 17	$ 15
Accounts receivable	75	65	Accounts payable	56	50
Inventory	118	100	Notes payable	45	45
Total	$221	$190	Total	$118	$110
Fixed assets:			Long-term debt:	$195	$190
Gross plant and equipment	$333	$300			

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Less: Accumulated depreciation	54	40	Stockholders' equity:		
Net plant and equipment	$279	$260	Preferred stock (5 million shares)	$ 5	$ 5
Other long-term assets	50	50	Common stock and paid-in surplus (20 million shares)	40	40
Total	$329	$310	Retained earnings	192	155
			Total	$237	$200
Total assets	$550	$500	Total liabilities and equity	$550	$500

LG2-5 2-38 **Free Cash Flow** Vinny's Overhead Construction had free cash flow during 2021 of $25.4 million. The change in gross fixed assets on Vinny's balance sheet during 2021 was $7.0 million and the change in net operating working capital was $8.4 million. Using this information, fill in the blanks on Vinny's income statement below.

IOC = ΔGross fixed assets + ΔNet operating working capital
=> IOC = $7.0m. + $8.4m. = $15.4m.

FCF = Operating cash flow – Investment in operating capital
=> $25.4m. = OCF – $15.4m.
=> OCF = $25.4m. + $15.4m. = $40.8m.

OCF = EBIT(1 – 0.21) + Depreciation
Using the numbers below: $40.8m. = EBIT(1 – 0.21) + $10.2m.
=> EBIT = ($40.8m. - $10.2m.)/(1 – 0.21) = $38.73m

Vinny's Overhead Construction, Corp.
Income Statement for Year Ending December 31, 2021
(in millions of dollars)

Net sales	$ 182.10	Step 1. (= $66.00 + $116.10)
Less: Cost of goods sold	116.10	
Gross profits	$ 66.00	
Less: Other operating expenses	17.07	Step 7. (= $66.00 - $48.93)
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	48.93	Step 6. (= $38.73 + $10.20)
Less: Depreciation	10.20	
Earnings before interest and taxes (EBIT)	$ 38.73	Step 2. (from above)
Less: Interest	3.73	Step 5. (= $38.73 - $35.00)
Earnings before taxes (EBT)	$ 35.00	Step 3. (= $27.65 / (1 – 0.21)
Less: Taxes (21% from above)	7.35	Step 4. (= $35.00 - $27.65)
Net income	$27.65	

research it! Reviewing Financial Statements
Go the web site of Wal-Mart Stores, Inc. at **www.walmartstores.com** and get the latest financial statements from the annual report using the following steps.

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Go to Wal-Mart Stores, Inc.'s Web site at **www.walmartstores.com.** Click on Investors, then select Annual Reports; next choose Annual Reports & Proxies. This will bring the file onto your computer that contains the relevant data. Locate the total assets, total equity, net sales, net income, dividends paid, cash flows from operating activities, and cash flows from investing activities for the last two years. How have these items changed over the last two years?

SOLUTION: The solution will vary with the year annual report is accessed. However, the annual report for each year summarizes the financial information necessary to evaluate key information used by firm managers, who make financial decisions, and by investors, who decide whether or not to invest in the firm.

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integrated mini-case: Working with Financial Statements

Shown below are partial financial statements for Garners' Platoon Mental Health Care, Inc. Fill in the blanks on the four financial statements.

Garners' Platoon Mental Health Care, Inc.
Balance Sheet as of December 31, 2021 and 2020
(in millions of dollars)

	2021	2020		2021	2020
Assets			**Liabilities and Equity**		
Current assets:			Current liabilities :		
Cash and marketable securities	$ 421	$	Accrued wages and taxes	$ 316	$ 242
Accounts receivable		1,020	Accounts payable	867	791
Inventory	1,760	1,581	Notes payable		714
Total	$3,290	$	Total	$2,055	$1,747
Fixed assets:			Long-term debt:	$3,090	$
Gross plant and equipment	$	$4,743			
Less: Accumulated depreciation	840	640	Stockholders' equity:		
Net plant and equipment	$4,972	$	Preferred stock (30 million shares)	$ 60	$ 60
Other long-term assets		790	Common stock and paid-in surplus (200 million shares)	637	
Total	$5,864	$4,893	Retained earnings	3,312	2,440
			Total	$4,009	$3,137
Total assets	$	$7,889			
			Total liabilities and equity	$9,154	$7,889

Garners' Platoon Mental Health Care, Inc.
Income Statement for Years Ending December 31, 2021 and 2020
(in millions of dollars)

	2021	2020
Net sales	$4,980	$
Less: Cost of goods sold		2,035
Gross profits	$2,734	$2,313
Less: Other operating expenses	125	100
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	2,609	2,213
Less: Depreciation	200	191
Earnings before interest and taxes (EBIT)	$2,409	$
Less: Interest (21 percent)		285
Earnings before taxes (EBT)	$2,094	$1,737
Less: Taxes		
Net income	$1,654	$1,372

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Less: Preferred stock dividends	$ 60	$____
Net income available to common stockholders	$1,594	$1,312
Less: Common stock dividends	722	722
Addition to retained earnings	$ 872	$____
Per (common) share data:		
Earnings per share (EPS)	$____	$____
Dividends per share (DPS)	$____	$____
Book value per share (BVPS)	$____	$____
Market value (price) per share (MVPS)	$26.850	$22.500

Garners' Platoon Mental Health Care, Inc.
Statement of Cash Flows for Year Ending December 31, 2021
(in millions of dollars)

A. Cash flows from operating activities	
Net income	$___
Additions (sources of cash):	
Depreciation	___
Increase in accrued wages and taxes	___
Increase in accounts payable	___
Subtractions (uses of cash):	
Increase in accounts receivable	___
Increase in inventory	___
Net cash flow from operating activities:	$___
B. Cash flows from investing activities	
Subtractions:	
Increase in fixed assets	$ ___
Increase in other long-term assets	___
Net cash flow from investing activities:	$ ___
C. Cash flows from financing activities	
Additions:	
Increase in notes payable	$___
Increase in long-term debt	___
Increase in common and preferred stock	___
Subtractions:	
Dividends	___
Net cash flow from financing activities:	$___

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D. Net change in cash and marketable securities **$ 26**

Garners' Platoon Mental Health Care, Inc.
Statement of Retained Earnings as of December 31, 2021
(in millions of dollars)

Balance of retained earnings, December 31, 2020		$2,440
Plus: Net income for 2021		
Less: Cash dividends paid		
Preferred stock	$	
Common stock		
Total cash dividends paid		
Balance of retained earnings, December 31, 2021		$

SOLUTION:

Garners' Platoon Mental Health Care, Inc.
Balance Sheet as of December 31, 2021 and 2020
(in millions of dollars)

Assets	**2021**	**2020**	**Liabilities and Equity**	**2021**	**2020**
Current assets:			Current liabilities :		
Cash and marketable securities	$ 421	$ 395	Accrued wages and taxes	$ 316	$ 242
Accounts receivable	1,109	1,020	Accounts payable	867	791
Inventory	1,760	1,581	Notes payable	872	714
Total	$3,290	$2,996	Total	$2,055	$1,747
Fixed assets:			Long-term debt:	$3,090	$3,005
Gross plant and equipment	$5,812	$4,743			
Less: Accumulated depreciation	840	640	Stockholders' equity:		
Net plant and equipment	$4,972	$4,103	Preferred stock (25 million shares)	$ 60	$ 60
Other long-term assets	892	790	Common stock and paid-in surplus (200 million shares)	637	637
Total	$5,864	$4,893	Retained earnings	3,312	2,440
			Total	$4,009	$3,137
Total assets	$9,154	$7,889			
			Total liabilities and equity	$9,154	$7,889

Garners' Platoon Mental Health Care, Inc.
Income Statement for Years Ending December 31, 2021 and 2020
(in millions of dollars)

	2021	**2020**
Net sales	$4,980	$4,348
Less: Cost of goods sold	2,246	2,035

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Gross profits	$2,734	$2,313
Less: Other operating expenses	125	100
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	2,609	2,213
Less: Depreciation	200	191
Earnings before interest and taxes (EBIT)	$2,409	$ 2,022
Less: Interest	315	285
Earnings before taxes (EBT)	$2,094	$1,737
Less: Taxes (21 percent)	440	365
Net income	$1,654	$1,372
Less: Preferred stock dividends	$ 60	$ 60
Net income available to common stockholders	$1,594	$1,312
Less: Common stock dividends	722	722
Addition to retained earnings	$ 872	$ 590
Per (common) share data:		
Earnings per share (EPS)	$ 7.970	$ 6.560
Dividends per share (DPS)	$ 3.610	$ 3.610
Book value per share (BVPS)	$19.745	$15.385
Market value (price) per share (MVPS)	$26.850	$22.500

Garners' Platoon Mental Health Care, Inc.
Statement of Cash Flows for Year Ending December 31, 2021
(in millions of dollars)

A. Cash flows from operating activities	
Net income	$1,654
Additions (sources of cash):	
Depreciation	200
Increase in accrued wages and taxes	74
Increase in accounts payable	76
Subtractions (uses of cash):	
Increase in accounts receivable	-89
Increase in inventory	-179
Net cash flow from operating activities:	$1,736
B. Cash flows from investing activities	
Subtractions:	
Increase in gross fixed assets	$-1,069
Increase in other long-term assets	-102
Net cash flow from investing activities:	$-1,171
C. Cash flows from financing activities	
Additions:	
Increase in notes payable	$ 158
Increase in long-term debt	85
Increase in common and preferred stock	0
Subtractions:	

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Dividends	-782
Net cash flow from financing activities:	$ -539
D. Net change in cash and marketable securities	**$ 26**

Garners' Platoon Mental Health Care, Inc.
Statement of Retained Earnings as of December 31, 2021
(in millions of dollars)

Balance of retained earnings, December 31, 2020		$2,440
Plus: Net income for 2021		1,654
Less: Cash dividends paid		
Preferred stock	$ 60	
Common stock	722	
Total cash dividends paid		$ 782
Balance of retained earnings, December 31, 2021		$3,312

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