$$\Delta V = V_{AB} - (V_A + V_B)$$

The gain to Firm A from acquiring Firm B is the increased value of the acquired firm, ΔV, plus the value of B as a separate firm, V_B. The total value of Firm B to Firm A, V_B^*, is thus:

$$V_B^* = \Delta V + V_B$$

An acquisition will benefit the shareholders of the acquiring firm if this value is greater than the cost of the acquisition.

The cost of an acquisition can be defined in general terms as the price paid to the shareholders of the acquired firm. The cost frequently includes a merger premium paid to the shareholders of the acquired firm. Moreover, the cost depends on the form of payment, that is, the choice between paying with cash or paying with common stock.

5. Benefits. The possible benefits of an acquisition come from several sources, including the following:
   a. Revenue enhancement
   b. Cost reductions
   c. Lower taxes
   d. Reductions in capital needs
6. Defensive tactics. Some of the most colorful language of finance comes from defensive tactics used in acquisition battles. *Poison pills, golden parachutes, crown jewels,* and *greenmail* are terms that describe various antitakeover tactics.
7. Effect on shareholders. Mergers and acquisitions have been extensively studied. The basic conclusions are that, on average, the shareholders of target firms do very well, whereas the shareholders of bidding firms do not appear to gain very much.

Chapter Review and Self-Test Problems

25.1 Merger Value and Cost Consider the following information for two all-equity firms, A and B:

	Firm A	Firm B
Shares outstanding	2,000	6,000
Price per share	$ 40	$ 30

Firm A estimates that the value of the synergistic benefit from acquiring Firm B is $6,000. Firm B has indicated that it would accept a cash purchase offer of $35 per share. Should Firm A proceed?

25.2 Stock Mergers and EPS Consider the following information for two all-equity firms, A and B:

	Firm A	Firm B
Total earnings	$3,000	$1,100
Shares outstanding	600	400
Price per share	$ 70	$ 15

Firm A is acquiring Firm B by exchanging 100 of its shares for all the shares in B. What is the cost of the merger if the merged firm is worth $63,000? What will happen to Firm A's EPS? Its PE ratio?

Answers to Chapter Review and Self-Test Problems

25.1 The total value of Firm B to Firm A is the premerger value of B plus the $6,000 gain from the merger. The premerger value of B is $30 × 6,000 = $180,000, so the total value is $186,000. At $35 per share, A is paying $35 × 6,000 = $210,000; the merger therefore has a negative NPV of $186,000 − 210,000 = −$24,000. At $35 per share, B is not an attractive merger partner.

25.2 After the merger, the firm will have 700 shares outstanding. Because the total value is $63,000, the price per share is $63,000/700 = $90, up from $70. Because Firm B's stockholders end up with 100 shares in the merged firm, the cost of the merger is 100 × $90 = $9,000, not 100 × $70 = $7,000.

Also, the combined firm will have $3,000 + 1,100 = $4,100 in earnings, so EPS will be $4,100/700 = $5.86, up from $3,000/600 = $5. The old PE ratio was $70/5 = 14.00. The new one is $90/5.86 = 15.36.

Concepts Review and Critical Thinking Questions

1. **Merger Accounting** Explain the difference between purchase and pooling of interests accounting for mergers. What is the effect on cash flows of the choice of accounting method? On EPS?
2. **Merger Terms** Define each of the following terms:
   a. Greenmail
   b. White knight
   c. Golden parachute
   d. Crown jewels
   e. Shark repellent
   f. Corporate raider
   g. Poison pill
   h. Tender offer
   i. Leveraged buyout, or LBO
3. **Merger Rationale** Explain why diversification *per se* is probably not a good reason for merger.
4. **Corporate Split** In January 1996, Dun and Bradstreet Corp. announced plans to split into three entities: an information services core to include Moody's credit-rating agencies, a company that would include the Nielsen media-rating business, and a third entity that would focus on tracking consumer packaged-goods purchases. D&B was not alone, because many companies voluntarily split up in the 1990s. Why might a firm do this? Is there a possibility of reverse synergy?
5. **Poison Pills** Are poison pills good or bad for stockholders? How do you think acquiring firms are able to get around poison pills?
6. **Merger and Taxes** Describe the advantages and disadvantages of a taxable merger as opposed to a tax-free exchange. What is the basic determinant of tax status in a merger? Would an LBO be taxable or nontaxable? Explain.

7. **Economies of Scale** What does it mean to say that a proposed merger will take advantage of available economies of scale? Suppose Eastern Power Co. and Western Power Co. are located in different time zones. Both of them operate at 60 percent of capacity except for peak periods, when they operate at 100 percent of capacity. The peak periods begin at 9:00 A.M. and 5:00 P.M. local time and last about 45 minutes. Explain why a merger between Eastern and Western might make sense.
8. **Hostile Takeovers** What types of actions might the management of a firm take to fight a hostile acquisition bid from an unwanted suitor? How do the target-firm shareholders benefit from the defensive tactics of their management team? How are the target-firm shareholders harmed by such actions? Explain.
9. **Merger Offers** Suppose a company in which you own stock has attracted two takeover offers. Would it ever make sense for your company's management to favor the lower offer? Does the form of payment affect your answer at all?
10. **Merger Profit** Acquiring-firm stockholders seem to benefit very little from takeovers. Why is this finding a puzzle? What are some of the reasons offered for it?

Questions and Problems

Basic
(Questions 1–9)

1. **Calculating Synergy** Pearl Inc. has offered $510 million cash for all of the common stock in Jam Corporation. Based on recent market information, Jam is worth $380 million as an independent operation. If the merger makes economic sense for Pearl, what is the minimum estimated value of the synergistic benefits from the merger?
2. **Balance Sheets for Mergers** Consider the following premerger information about Firm X and Firm Y:

	Firm X	Firm Y
Total earnings	$30,000	$20,000
Shares outstanding	20,000	20,000
Per-share values:		
Market	$ 75	$ 20
Book	$ 25	$ 9

Assume that Firm X acquires Firm Y by paying cash for all the shares outstanding at a merger premium of $8 per share. Assuming that neither firm has any debt before or after the merger, construct the postmerger balance sheet for Firm X assuming the use of (*a*) pooling of interests accounting methods and (*b*) purchase accounting methods.

3. **Balance Sheets for Mergers** Assume that the following balance sheets are stated at book value. Construct a postmerger balance sheet assuming that Sipowicz purchases Sorenson and the pooling of interests method of accounting is used.

Sipowicz Co.			
Current assets	$ 8,000	Current liabilities	$ 2,400
Net fixed assets	12,000	Long-term debt	1,600
		Equity	16,000
Total	$20,000	Total	$20,000

Basic (*continued*)

Sorenson, Inc.			
Current assets	$3,000	Current liabilities	$1,300
Net fixed assets	5,000	Long-term debt	700
		Equity	6,000
Total	$8,000	Total	$8,000

4. **Incorporating Goodwill** In the previous problem, suppose the fair market value of Sorenson's fixed assets is $10,000 versus the $5,000 book value shown. Sipowicz pays $14,000 for Sorenson and raises the needed funds through an issue of long-term debt. Construct the postmerger balance sheet now, assuming that the purchase method of accounting is used.
5. **Balance Sheets for Mergers** Silver Enterprises has acquired All Gold Mining in a merger transaction. Construct the balance sheet for the new corporation if the merger is treated as a pooling of interests for accounting purposes. The following balance sheets represent the premerger book values for both firms.

Silver Enterprises			
Current assets	$2,000	Current liabilities	$1,400
Other assets	600	Long-term debt	600
Net fixed assets	3,400	Equity	4,000
Total	$6,000	Total	$6,000

All Gold Mining			
Current assets	$1,000	Current liabilities	$800
Other assets	300	Long-term debt	0
Net fixed assets	2,700	Equity	3,200
Total	$4,000	Total	$4,000

6. **Incorporating Goodwill** In the previous problem, construct the balance sheet for the new corporation assuming that the transaction is treated as a purchase for accounting purposes. The market value of All Gold Mining's fixed assets is $2,800; the market values for current and other assets are the same as the book values. Assume that Silver Enterprises issues $8,400 in new long-term debt to finance the acquisition.
7. **Cash versus Stock Payment** Eastman Corp. is analyzing the possible acquisition of Kodiak Company. Both firms have no debt. Eastman believes the acquisition will increase its total aftertax annual cash flows by $2.6 million indefinitely. The current market value of Kodiak is $102 million, and that of Eastman is $140 million. The appropriate discount rate for the incremental cash flows is 12 percent. Eastman is trying to decide whether it should offer 40 percent of its stock or $110 million in cash to Kodiak's shareholders.
   a. What is the cost of each alternative?
   b. What is the NPV of each alternative?
   c. Which alternative should Eastman choose?

Basic
(*continued*)

8. **EPS, PE, and Mergers** The shareholders of Creed Security Company have voted in favor of a buyout offer from What If Corporation. Information about each firm is given here:

	Creed	What If
Price-earnings ratio	5.25	21
Shares outstanding	60,000	180,000
Earnings	$300,000	$675,000

Creed's shareholders will receive one share of What If stock for every three shares they hold in Creed.

a. What will the EPS of What If be after the merger? What will the PE ratio be if the NPV of the acquisition is zero?

b. What must What If feel is the value of the synergy between these two firms? Explain how your answer can be reconciled with the decision to go ahead with the takeover.

9. **Cash versus Stock as Payment** Consider the following premerger information about a bidding firm (Firm B) and a target firm (Firm T). Assume that both firms have no debt outstanding.

	Firm B	Firm T
Shares outstanding	1,000	600
Price per share	$34	$24

Firm B has estimated that the value of the synergistic benefits from acquiring Firm T is $3,000.

a. If Firm T is willing to be acquired for $27 per share in cash, what is the NPV of the merger?

b. What will the price per share of the merged firm be assuming the conditions in (*a*)?

c. In part (*a*), what is the merger premium?

d. Suppose Firm T is agreeable to a merger by an exchange of stock. If B offers three of its shares for every five of T's shares, what will the price per share of the merged firm be?

e. What is the NPV of the merger assuming the conditions in (*d*)?

Intermediate
(Questions 10–12)

10. **Cash versus Stock as Payment** In Problem 9, are the shareholders of Firm T better off with the cash offer or the stock offer? At what exchange ratio of B shares to T shares would the shareholders in T be indifferent between the two offers?

11. **Effects of a Stock Exchange** Consider the following premerger information about Firm A and Firm B:

	Firm A	Firm B
Total earnings	$800	$500
Shares outstanding	550	200
Price per share	$ 40	$ 15

Assume that Firm A acquires Firm B via an exchange of stock at a price of $20 for each share of B's stock. Both A and B have no debt outstanding.

Intermediate (*continued*)

a. What will the earnings per share, EPS, of Firm A be after the merger?
b. What will Firm A's price per share be after the merger if the market incorrectly analyzes this reported earnings growth (that is, the price-earnings ratio does not change)?
c. What will the price-earnings ratio of the postmerger firm be if the market correctly analyzes the transaction?
d. If there are no synergy gains, what will the share price of A be after the merger? What will the price-earnings ratio be? What does your answer for the share price tell you about the amount A bid for B? Was it too high? Too low? Explain.

12. **Merger NPV** Show that the NPV of a merger can be expressed as the value of the synergistic benefits, ΔV, less the merger premium.

Challenge (Question 13)

13. **Calculating NPV** Foxy News, Inc., is considering making an offer to purchase Pulitzer Publications. The vice president of finance has collected the following information:

	Foxy	Pulitzer
Price-earnings ratio	11.5	8
Shares outstanding	1,000,000	300,000
Earnings	$2,000,000	$480,000

Foxy also knows that securities analysts expect the earnings and dividends (currently $0.88 per share) of Pulitzer to grow at a constant rate of 3 percent each year. Foxy management believes that the acquisition of Pulitzer will provide the firm with some economies of scale that will increase this growth rate to 5 percent per year.

a. What is the value of Pulitzer to Foxy?
b. What would Foxy's gain be from this acquisition?
c. If Foxy were to offer $15 in cash for each share of Pulitzer, what would the NPV of the acquisition be?
d. What's the most Foxy should be willing to pay in cash per share for the stock of Pulitzer?
e. If Foxy were to offer 125,000 of its shares in exchange for the outstanding stock of Pulitzer, what would the NPV be?
f. Should the acquisition be attempted, and, if so, should it be as in (*c*) or as in (*e*)?
g. Foxy's outside financial consultants think that the 5 percent growth rate is too optimistic and a 4 percent rate is more realistic. How does this change your previous answers?