savings plan shown in Table 2.8, aren't they introducing greater risk into the process, in the sense that one never knows what can happen in the future, and saving greater amounts earlier in their lives provides a cushion in later years if something goes wrong? Discuss this point, addressing both sides of the issue.

problems and review questions

1. What is compounding?
2. What is compound interest? How does it differ from simple interest?
3. Suppose you invest $5,000 for five years at an interest rate of 8 percent. How much simple interest would you earn over the five years? How much compound interest would you earn? What is the explanation for the difference between these two amounts?
4. What is a future value?
5. Suppose you can earn 10 percent on an investment rather than 8 percent. After 20 years, the future value will be 25 percent greater. True or false? Explain.
6. Future values always grow larger the longer an investment is held. But do they grow proportionately larger? For example, if you hold an investment for 40 years, do you earn twice as much as you would if you hold it for 20 years? Discuss.
7. You want to double your money in six years. Approximately what rate of interest must you earn?
8. If inflation in the future runs at a 3 percent annual rate, how long will it take for prices to double?
9. What is an annuity? What is meant by the future value of an annuity?
10. How does an ordinary annuity differ from an annuity due? Which one provides the larger value in a compounding situation?
11. Explain the difference between compounding and discounting.
12. Find the following future values, using Table 2.1 or Table 2.2:
    a. $500 invested today at a 6 percent rate and held for 20 years
    b. $800 invested at the end of each of the next 10 years to earn 10 percent
    c. $300 invested at the beginning of each of the next 40 years to earn 8 percent
13. Find the following present values, using Table 2.3 or Table 2.4:
    a. $6,000 received 30 years from now, discounted at 10 percent
    b. $4,000 to be received at the end of each of the next 10 years, discounted at 6 percent
    c. $2,000 to be received at the end of each of the next three years, discounted at 8 percent
14. Suppose an investment has been offered to you that requires an initial outlay of $10,000. Ten years from now the investment will pay you $20,000. If you think an investment of this type should offer a return of 8 percent, should you make the investment? Explain, showing your analysis.
15. You can buy an annuity contract that will pay you $1,000 a year (end of year) for the next 10 years. The contract costs $6,000 today. If you think you should earn 6 percent on such investments, should you buy the contract? Explain, showing your analysis.
16. You have $15,000 to invest today. You hope to buy a new car that costs $25,000 in four years. What approximate rate of interest must you earn to achieve your goal?
17. You can invest $40,000 today toward your eventual retirement that will earn 14 percent interest over the period. You want to have $500,000 at the retirement date. How many years away from retirement are you?

18. You can invest $3,000 annually at the end of each of the next 12 years. You hope to have $60,000 in the investment account by then. What rate of interest must you earn to meet this goal?
19. Your grandmother died recently. She named you as a beneficiary on an insurance contract that will pay you $60,000 immediately. However, the contract gives you the alternative of taking $20,000 a year (end of year) for the next five years. You think that you will earn 6 percent on your investments over this period of time. Given this information, what is the better choice—immediate cash or the extended payout? Explain.
20. Distinguish between a goal and a dream.
21. The first phase of goal planning involves three steps. List them.
22. How is inflation handled in the goal-planning process? Explain.
23. Explain, as best you can, what is meant by a required annual savings amount.
24. What is a savings schedule?
25. Explain why it is necessary to monitor a savings plan over time.

case 2.1

Judy Shipley Plans for the Future

Judy Shipley graduated recently from Columbia University with an M.B.A. degree. Judy had five years of experience with a stockbrokerage firm before she entered Columbia, and this experience plus a very salable degree have landed Judy a fantastic position as an assistant portfolio manager with a mutual fund company. Her starting salary will be $110,000. Judy is unmarried and not contemplating marriage in the immediate future. She currently has no debts and no significant assets. Judy will move to Philadelphia shortly, with all moving expenses paid by her new employer.

Judy has assembled a list of goals that she would like to achieve over the next 10 years. The list does not include a retirement goal because her employer has a 401(k) plan in which she will participate. Judy hopes that her high income will support an ambitious goal plan because she wants to avoid any short-term debt. Judy anticipates an inflation rate of 4 percent on all the activities except the down payment on the town house. She has learned that housing prices in the neighborhood she favors have been increasing at an 8 percent rate. She will use that figure. Because Judy intends to make rather conservative investments, an investment rate of 6 percent seems reasonable to use.

Intended Activity	Future Date	Amount
1. Trip to Asia	2 years	$ 20,000
2. Purchase a new Lexus for cash	4 years	60,000
3. Make a down payment on a town house	6 years	80,000
4. Furnish the town house	8 years	100,000

Questions

1. Using Table 2.5 as a guide, prepare a similar schedule and calculate a required annual savings amount for each activity. How much must Judy save and invest each year (assume end-of-year payments) to achieve all of her goals? (Use Your Financial Review Form 2.2 at the author's Web site.)
2. Using your analysis from Question 1, prepare a savings schedule similar to the one shown in Table 2.6. (Use Your Financial Review Form 2.3 at author's Web site.)
3. Do you think that Judy will be able to meet her savings requirements, assuming taxes and 401(k) contributions will take about 40 percent of her income? Discuss your response.