

ch1

Student: _____

1. The future value of a present sum increases with a rise in the interest rate.
True False
2. The present value of a future sum decreases with a rise in the interest rate.
True False
3. Annual compounding at a given rate of interest will yield the same future value as a somewhat higher continuously compounded interest rate.
True False
4. Many naïve investors tend to buy high and sell low.
True False
5. Over a 40-year investment horizon, 9% growth more than triples the amount earned at 6%.
True False
6. A 6% rate of return is a typical average for long-term bond investors.
True False
7. Under a defined-contribution retirement plan, employees are promised a fixed retirement income of, say, 1% times the number of years served times the last year's salary.
True False
8. Over time, defined-contribution retirement plans in the United States have been abandoned in favor of what are called defined-benefit plans.
True False
9. Investments theory explains the economic forces that determine prices for stocks, bonds, and other assets such as real estate, art, and collectibles.
True False
10. Portfolio theory tells us that diversification has the potential to reduce anticipated risk for a given expected return.
True False
11. The price of higher expected return is greater anticipated risk.
True False

12. The efficient market hypothesis states that every security at every point in time is fairly priced.
True False
13. Understanding a person's incentives goes a long way to predicting their behavior.
True False
14. Difficult decisions with a high degree of uncertainty are less likely to be influenced by emotions and feelings.
True False
15. The efficient market hypothesis is consistent with the observation that security prices are sometimes, but only rarely, too low (undervalued) or too high (overvalued).
True False
16. On average, return on equity consistently falls in the range from 20%-22% per year for the broad cross-section of businesses in the United States.
True False
17. A plain text report of quarterly accounting earnings information is provided on the Schedule 10K report
True False
18. EDGAR is a for profit company that specializes in providing investor access to SEC reports and filings.
True False
19. Schedule 13D filings are made to the SEC within 10 days of an entity attaining a 5% or more position of a company's stock.
True False
20. SEC Form 144 filings must only be submitted by holders of restricted securities, sometimes called letter stock, after they have sold such shares to the general public.
True False
21. The present value of a future sum will rise with a fall in the:
A. interest rate.
B. investment period.
C. future sum.
D. none of these.
22. Using annual compounding, what is the present value of a \$39,703 sum to be received in 16 years when a 9% rate of return can be earned on investment?
A. \$9,406.
B. \$10,000.
C. \$5,000.
D. \$157,633.

23. Over a 36-year period, an investment growing at 12% compounds to a final value that is:
- A. twice that of an investment growing at 6%.
 - B. four times that of an investment growing at 6%.
 - C. six times that of an investment growing at 6%.
 - D. sixteen times that of an investment growing at 4%.
24. Since World War II, stock investors have outperformed bond investors by about:
- A. 6% per year.
 - B. 12% per year.
 - C. 3% per year.
 - D. 1% per year.
25. Since World War II, investors in a 50/50 mix of stocks and bonds have earned a nominal return before taxes of roughly:
- A. 14% per year.
 - B. 9% per year.
 - C. 6% per year.
 - D. 3% per year.
26. Under a defined-benefit retirement plan, employees are promised:
- A. a fixed lump sum amount at retirement.
 - B. employer matching of employee retirement plan contributions.
 - C. a variable amount at retirement, depending upon retirement plan performance.
 - D. a fixed retirement income.
27. Portfolio theory tells us that diversification has the potential to:
- A. increase anticipated risk for a given expected return.
 - B. reduce expected return for a given anticipated risk.
 - C. reduce anticipated risk for a given expected return.
 - D. reduce transaction costs.
28. Financial theory is useful because it is:
- A. able to predict stock and bond prices.
 - B. logical.
 - C. mathematically rigorous.
 - D. derived from economic principles.
29. A stock broker may improperly buy and sell the securities in a customer's account to generate commissions. This is known as _____ .
- A. enhancement
 - B. insider trading
 - C. indexing
 - D. churning
30. Annual accounting information is filed with the SEC on the:
- A. 10K report.
 - B. 10Q report.
 - C. 13D report.
 - D. Form 144.

31. Under a defined-contribution retirement plan, individual employees are paid a retirement income based upon the:
- A. number of years of service.
 - B. employee's final year's salary and years of service.
 - C. employee's retirement plan contributions.
 - D. total value accumulated in their retirement portfolio.
32. Advisors that help clients with asset allocation, investment goals, insurance needs, tax and estate planning are called _____ .
- A. investment bankers
 - B. stock brokers
 - C. financial planners
 - D. financial analysts
33. Annual compounding at 10% results in the same future value as a continuously compounded interest rate that is:
- A. more than 10%.
 - B. less than 10%.
 - C. equal to 10%.
 - D. none of these.
34. At a 6% annual rate of return, the present value of a of \$100,000 per year payment in perpetuity is roughly:
- A. \$6,000.
 - B. \$1.67 million.
 - C. \$1 million.
 - D. \$167,000.
35. The short-term bond investor has an advantage over long-term stock investors in terms of:
- A. return stability.
 - B. total expected return.
 - C. total realized return.
 - D. total nominal return.
36. When investing to pay for a child's college education, the disadvantage of a small initial investment can be offset by:
- A. use of continuous compounding.
 - B. an extended investment horizon.
 - C. broad diversification among stocks and bonds.
 - D. use of annual compounding.
37. If risk-free U. S. Treasury bills yield 6% interest, similar government bonds that yield more than 6% per year have an:
- A. intermediate-term to maturity.
 - B. long-term to maturity.
 - C. short-term to maturity.
 - D. none of these.

38. The efficient market hypothesis is consistent with the observation that:
- A. security prices are rarely too high.
 - B. most professional investors beat the market.
 - C. some individual investors beat the market.
 - D. market psychology determines stock prices.
39. Regression to the mean implies that:
- A. industry profits follow a random walk.
 - B. firm profits follow a random walk.
 - C. economy-wide profits follow a random walk.
 - D. none of these.
40. A P/E of 20 implies that the firm has five cents in earnings for each dollar of:
- A. stockholders' equity.
 - B. book value.
 - C. market value.
 - D. sales.
41. Which among the following is *not* consistent with the regression to the mean concept?
- A. persistent rates of return on stockholders' equity that average 20% per year.
 - B. over the long run, investing larger amounts of capital tends to drive down the rate of profit per dollar invested.
 - C. low-profit firms see their profit rate rise over time as investors redeploy funds to other more profitable uses.
 - D. the normal rate of return concept.
42. At a 6% annual rate of return, a perpetuity of \$10,000 per month has a present value of:
- A. \$120,000.
 - B. \$1 million.
 - C. \$2 million.
 - D. \$16.7 million.
43. The Efficient Markets Hypothesis is consistent with the notion that:
- A. every security is *always* fairly priced.
 - B. the average professional investor will underperform the market before expenses.
 - C. some securities are overvalued.
 - D. some securities are undervalued.
44. The return on equity:
- A. measures long-term stock-market rates of return.
 - B. falls with a rise in financial leverage.
 - C. is the ratio of net income divided by book value per share.
 - D. rises with a decline in operating leverage.
45. \$10,000 invested for 20 years and earning 12% per year will accumulate approximately _____ as much as if invested at a 6% rate of return.
- A. twice
 - B. three times
 - C. four times
 - D. half

46. Who is responsible for making investment decisions and contributing to a defined contribution plan?
- A. employee
 - B. government
 - C. Pension Benefit Guarantee Corporation
 - D. employee
47. Warren Buffett seeks to buy firms that
- A. have a low P/E ratio
 - B. have consistently low return on equity
 - C. are rapidly growing
 - D. all of the above
48. Finance professionals who work with individual investors and institutions in advising and executing orders for individual common stocks or bonds are called:
- A. brokers.
 - B. portfolio managers.
 - C. analysts.
 - D. certified financial planners.
49. Finance professionals primarily involved with the distribution of securities from issuing corporations to the general public are called:
- A. security analysts.
 - B. technicians.
 - C. investment bankers.
 - D. chief financial officers.
50. Comprehensive information about insider stock holdings is available on the:
- A. proxy statement.
 - B. 13D.
 - C. 10Q.
 - D. 144 report.
51. A trusted source of SEC report information on the Internet:
- A. is EDGAR.
 - B. is the reporting company.
 - C. are various Internet news organizations.
 - D. are message boards.
52. High insider net buy activity reported on 13D filings is:
- A. bearish.
 - B. evidence of illegal corporate activity.
 - C. bullish.
 - D. none of these.
53. EDGAR is:
- A. a nonprofit news organization.
 - B. a government agency.
 - C. an arm of the Securities and Exchange Commission.
 - D. a for-profit corporation.

54. Reports submitted to the SEC by holders of restricted stock who intend to sell shares are called:
- A. Form 144 filings.
 - B. 10K reports.
 - C. proxy statements.
 - D. 13D reports.
55. An initial 13D filing would typically be regarded as:
- A. bearish.
 - B. evidence of illegal corporate activity.
 - C. bullish.
 - D. none of these.
56. Suppose you want to buy a house. If you invest \$12,000 in a bank account that pays 6% interest per year, how much will you have for a down payment in 7 years?
57. Assume that you expect to inherit \$100,000 in 10 years. What is the present value of that future \$100,000 given a 4% annual interest rate (compounded annually)?
58. Home Depot's common stock rose from a split-adjusted price of \$9.07 in March of 1995 to a price of \$39.92 in February of 2005. Over this ten-year period, what was the compound annual rate of return earned by Home Depot shareholders?

59. What rate of return is needed to double your investment in 10 years? Use annual compounding to find the rate of return needed to double \$10,000 in 10 years.
60. Compare the future value of \$10,000 invested for 45 years in common stocks and \$20,000 invested for 45 years in bonds. Assume a 12% annual return for common stocks and a 6% annual return for bonds.
61. In 2004, the Johnson Controls had a net income of \$813.5 million on revenue of \$27.1 billion, and had debt of \$2.79 billion and stockholders' equity of \$5.58 billion. What was Johnson Control's return on equity for 2005?
62. In late 2004, the Home Depot reported 2004 full-year earnings per share of \$2.26, and the company's stock traded near a price of \$40. What is Home Depot's P/E ratio?

63. A young investor begins saving early by investing \$1,000 per year, every year, for 35 years. The investment account earns an annual 10% return.
- A. How much will be in the investment account at the end of 35 years?
 - B. A middle-aged investor has not saved for retirement. He has only 20 years left to invest. If he also invests for a 10% return, how much must he invest each year to equal the amount the young investor will have (from part A.)?
64. Assuming annual compounding, calculate the future value of a \$10,000 investment earning 8% interest over a period of 27 years.
65. Assuming annual compounding, calculate the present value of \$10,000 to be received in 24 years when a 3% rate of return can be earned on investment.
66. Show how the future value of a 10-year \$10,000 investment growing at 6% differs when using annual versus continuous compounding. Explain any differences.

67. 13D filings tell shareholders about big investors buying 5% or more of the company. Why might this information be useful?
68. Form 144 filings tell shareholders about insiders who intend to sell shares in the company. What kind of signal does this information send to shareholders?

ch1 Key

1. The future value of a present sum increases with a rise in the interest rate.

TRUE

Hirshey - Chapter 01 #1

2. The present value of a future sum decreases with a rise in the interest rate.

TRUE

Hirshey - Chapter 01 #2

3. Annual compounding at a given rate of interest will yield the same future value as a somewhat higher continuously compounded interest rate.

FALSE

Hirshey - Chapter 01 #3

4. Many naïve investors tend to buy high and sell low.

TRUE

Hirshey - Chapter 01 #4

5. Over a 40-year investment horizon, 9% growth more than triples the amount earned at 6%.

TRUE

$1.0940 = 31.09$, $1.0640 = 10.29$, so $31.09 / 10.29 = 3.02$ times

Hirshey - Chapter 01 #5

6. A 6% rate of return is a typical average for long-term bond investors.

TRUE

Hirshey - Chapter 01 #6

7. Under a defined-contribution retirement plan, employees are promised a fixed retirement income of, say, 1% times the number of years served times the last year's salary.

FALSE

Hirshey - Chapter 01 #7

8. Over time, defined-contribution retirement plans in the United States have been abandoned in favor of what are called defined-benefit plans.

FALSE

Hirshey - Chapter 01 #8

9. Investments theory explains the economic forces that determine prices for stocks, bonds, and other assets such as real estate, art, and collectibles.

TRUE

Hirshey - Chapter 01 #9

10. Portfolio theory tells us that diversification has the potential to reduce anticipated risk for a given expected return.

TRUE

Hirshey - Chapter 01 #10

11. The price of higher expected return is greater anticipated risk.

TRUE

Hirshey - Chapter 01 #11

12. The efficient market hypothesis states that every security at every point in time is fairly priced.

TRUE

Hirshey - Chapter 01 #12

13. Understanding a person's incentives goes a long way to predicting their behavior.

TRUE

Hirshey - Chapter 01 #13

14. Difficult decisions with a high degree of uncertainty are less likely to be influenced by emotions and feelings.

FALSE

Hirshey - Chapter 01 #14

15. The efficient market hypothesis is consistent with the observation that security prices are sometimes, but only rarely, too low (undervalued) or too high (overvalued).

FALSE

Hirshey - Chapter 01 #15

16. On average, return on equity consistently falls in the range from 20%-22% per year for the broad cross-section of businesses in the United States.

FALSE

Hirshey - Chapter 01 #16

17. A plain text report of quarterly accounting earnings information is provided on the Schedule 10K report

FALSE

Hirshey - Chapter 01 #17

18. EDGAR is a for profit company that specializes in providing investor access to SEC reports and filings.

FALSE

Hirshey - Chapter 01 #18

19. Schedule 13D filings are made to the SEC within 10 days of an entity attaining a 5% or more position of a company's stock.

TRUE

Hirshey - Chapter 01 #19

20. SEC Form 144 filings must only be submitted by holders of restricted securities, sometimes called letter stock, after they have sold such shares to the general public.

FALSE

Hirshey - Chapter 01 #20

21. The present value of a future sum will rise with a fall in the:

- A.** interest rate.
- B. investment period.
- C. future sum.
- D. none of these.

Hirshey - Chapter 01 #21

22. Using annual compounding, what is the present value of a \$39,703 sum to be received in 16 years when a 9% rate of return can be earned on investment?

- A. \$9,406.
- B.** \$10,000.
- C. \$5,000.
- D. \$157,633.

$$\$39,703 \cdot 1.09^{-16} = \$10,000$$

Hirshey - Chapter 01 #22

23. Over a 36-year period, an investment growing at 12% compounds to a final value that is:

- A. twice that of an investment growing at 6%.
- B. four times that of an investment growing at 6%.
- C. six times that of an investment growing at 6%.
- D.** sixteen times that of an investment growing at 4%.

Hirshey - Chapter 01 #23

24. Since World War II, stock investors have outperformed bond investors by about:

- A.** 6% per year.
- B. 12% per year.
- C. 3% per year.
- D. 1% per year.

Hirshey - Chapter 01 #24

25. Since World War II, investors in a 50/50 mix of stocks and bonds have earned a nominal return before taxes of roughly:

- A. 14% per year.
- B.** 9% per year.
- C. 6% per year.
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Hirshey - Chapter 01 #25

26. Under a defined-benefit retirement plan, employees are promised:
- A. a fixed lump sum amount at retirement.
 - B. employer matching of employee retirement plan contributions.
 - C. a variable amount at retirement, depending upon retirement plan performance.
 - D.** a fixed retirement income.

Hirshey - Chapter 01 #26

27. Portfolio theory tells us that diversification has the potential to:
- A. increase anticipated risk for a given expected return.
 - B. reduce expected return for a given anticipated risk.
 - C.** reduce anticipated risk for a given expected return.
 - D. reduce transaction costs.

Hirshey - Chapter 01 #27

28. Financial theory is useful because it is:
- A.** able to predict stock and bond prices.
 - B. logical.
 - C. mathematically rigorous.
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Hirshey - Chapter 01 #28

29. A stock broker may improperly buy and sell the securities in a customer's account to generate commissions. This is known as _____ .
- A. enhancement
 - B. insider trading
 - C. indexing
 - D.** churning

Hirshey - Chapter 01 #29

30. Annual accounting information is filed with the SEC on the:
- A.** 10K report.
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Hirshey - Chapter 01 #30

31. Under a defined-contribution retirement plan, individual employees are paid a retirement income based upon the:
- A. number of years of service.
 - B. employee's final year's salary and years of service.
 - C. employee's retirement plan contributions.
 - D.** total value accumulated in their retirement portfolio.

Hirshey - Chapter 01 #31

32. Advisors that help clients with asset allocation, investment goals, insurance needs, tax and estate planning are called _____ .
- A. investment bankers
 - B. stock brokers
 - C. financial planners**
 - D. financial analysts

Hirshey - Chapter 01 #32

33. Annual compounding at 10% results in the same future value as a continuously compounded interest rate that is:
- A. more than 10%.
 - B. less than 10%.**
 - C. equal to 10%.
 - D. none of these.

Hirshey - Chapter 01 #33

34. At a 6% annual rate of return, the present value of a of \$100,000 per year payment in perpetuity is roughly:
- A. \$6,000.
 - B. \$1.67 million.**
 - C. \$1 million.
 - D. \$167,000.

$$\$100,000 \div 0.06 = \$1.67 \text{ million}$$

Hirshey - Chapter 01 #34

35. The short-term bond investor has an advantage over long-term stock investors in terms of:
- A. return stability.**
 - B. total expected return.
 - C. total realized return.
 - D. total nominal return.

Hirshey - Chapter 01 #35

36. When investing to pay for a child's college education, the disadvantage of a small initial investment can be offset by:
- A. use of continuous compounding.
 - B. an extended investment horizon.**
 - C. broad diversification among stocks and bonds.
 - D. use of annual compounding.

Hirshey - Chapter 01 #36

37. If risk-free U. S. Treasury bills yield 6% interest, similar government bonds that yield more than 6% per year have an:
- A. intermediate-term to maturity.
 - B. long-term to maturity.
 - C. short-term to maturity.
 - D. none of these.**

Hirshey - Chapter 01 #37

38. The efficient market hypothesis is consistent with the observation that:
- A. security prices are rarely too high.
 - B. most professional investors beat the market.
 - C. some individual investors beat the market.
 - D. market psychology determines stock prices.

Hirschey - Chapter 01 #38

39. Regression to the mean implies that:
- A. industry profits follow a random walk.
 - B. firm profits follow a random walk.
 - C. economy-wide profits follow a random walk.
 - D. none of these.

Hirschey - Chapter 01 #39

40. A P/E of 20 implies that the firm has five cents in earnings for each dollar of:
- A. stockholders' equity.
 - B. book value.
 - C. market value.
 - D. sales.

Hirschey - Chapter 01 #40

41. Which among the following is *not* consistent with the regression to the mean concept?
- A. persistent rates of return on stockholders' equity that average 20% per year.
 - B. over the long run, investing larger amounts of capital tends to drive down the rate of profit per dollar invested.
 - C. low-profit firms see their profit rate rise over time as investors redeploy funds to other more profitable uses.
 - D. the normal rate of return concept.

Hirschey - Chapter 01 #41

42. At a 6% annual rate of return, a perpetuity of \$10,000 per month has a present value of:
- A. \$120,000.
 - B. \$1 million.
 - C. \$2 million.
 - D. \$16.7 million.

$$\$10,000 \div (0.06/12) = \$2 \text{ million}$$

Hirschey - Chapter 01 #42

43. The Efficient Markets Hypothesis is consistent with the notion that:
- A. every security is *always* fairly priced.
 - B. the average professional investor will underperform the market before expenses.
 - C. some securities are overvalued.
 - D. some securities are undervalued.

Hirschey - Chapter 01 #43

44. The return on equity:
- A. measures long-term stock-market rates of return.
 - B. falls with a rise in financial leverage.
 - C.** is the ratio of net income divided by book value per share.
 - D. rises with a decline in operating leverage.

Hirshey - Chapter 01 #44

45. \$10,000 invested for 20 years and earning 12% per year will accumulate approximately _____ as much as if invested at a 6% rate of return.
- A. twice
 - B.** three times
 - C. four times
 - D. half

accumulation at 12%: $100,000 \times 1.12^{20} = \$964,629$, accumulation at 6%: $100,000 \times 1.06^{20} = \$320,714$, the 12% accumulation is $964,629 / 320,714 = 3.01$ times that of the 6% return.

Hirshey - Chapter 01 #45

46. Who is responsible for making investment decisions and contributing to a defined contribution plan?
- A.** employee
 - B. government
 - C. Pension Benefit Guarantee Corporation
 - D.** employee

Hirshey - Chapter 01 #46

47. Warren Buffett seeks to buy firms that
- A.** have a low P/E ratio
 - B. have consistently low return on equity
 - C. are rapidly growing
 - D. all of the above

Hirshey - Chapter 01 #47

48. Finance professionals who work with individual investors and institutions in advising and executing orders for individual common stocks or bonds are called:
- A.** brokers.
 - B. portfolio managers.
 - C. analysts.
 - D. certified financial planners.

Hirshey - Chapter 01 #48

49. Finance professionals primarily involved with the distribution of securities from issuing corporations to the general public are called:
- A. security analysts.
 - B. technicians.
 - C.** investment bankers.
 - D. chief financial officers.

Hirshey - Chapter 01 #49

50. Comprehensive information about insider stock holdings is available on the:

- A. proxy statement.
- B. 13D.
- C. 10Q.
- D. 144 report.

Hirschey - Chapter 01 #50

51. A trusted source of SEC report information on the Internet:

- A. is EDGAR.
- B. is the reporting company.
- C. are various Internet news organizations.
- D. are message boards.

Hirschey - Chapter 01 #51

52. High insider net buy activity reported on 13D filings is:

- A. bearish.
- B. evidence of illegal corporate activity.
- C. bullish.
- D. none of these.

Hirschey - Chapter 01 #52

53. EDGAR is:

- A. a nonprofit news organization.
- B. a government agency.
- C. an arm of the Securities and Exchange Commission.
- D. a for-profit corporation.

Hirschey - Chapter 01 #53

54. Reports submitted to the SEC by holders of restricted stock who intend to sell shares are called:

- A. Form 144 filings.
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Hirschey - Chapter 01 #54

55. An initial 13D filing would typically be regarded as:

- A. bearish.
- B. evidence of illegal corporate activity.
- C. bullish.
- D. none of these.

Hirschey - Chapter 01 #55

56. Suppose you want to buy a house. If you invest \$12,000 in a bank account that pays 6% interest per year, how much will you have for a down payment in 7 years?

$$\begin{aligned} \text{Future value} &= \text{Present sum} \times (1 + \text{Interest rate})^t = \$12,000 \times (1 + 0.06)^7 \\ &= \$18,043.56 \end{aligned}$$

Hirschey - Chapter 01 #56

57. Assume that you expect to inherit \$100,000 in 10 years. What is the present value of that future \$100,000 given a 4% annual interest rate (compounded annually)?

$$\begin{aligned}\text{Present value} &= \text{Future sum} / (1 + \text{Interest rate})^t = \$100,000 / (1 + 0.04)^{10} \\ &= \$67,556.42\end{aligned}$$

Hirshey - Chapter 01 #57

58. Home Depot's common stock rose from a split-adjusted price of \$9.07 in March of 1995 to a price of \$39.92 in February of 2005. Over this ten-year period, what was the compound annual rate of return earned by Home Depot shareholders?

$$\begin{aligned}\text{Future value} &= \text{Present sum} \times (1 + \text{Interest rate})^t \\ \$39.92 &= \$9.07 \times (1 + \text{Interest rate})^{10} \\ 16.0\% &= \text{Interest rate}\end{aligned}$$

Hirshey - Chapter 01 #58

59. What rate of return is needed to double your investment in 10 years? Use annual compounding to find the rate of return needed to double \$10,000 in 10 years.

$$\begin{aligned}\text{Future value} &= \text{Present sum} \times (1 + \text{Interest rate})^t \\ \$20,000 &= \$10,000 \times (1 + \text{Interest rate})^{10} \\ 7.18\% &= \text{Interest rate}\end{aligned}$$

Hirshey - Chapter 01 #59

60. Compare the future value of \$10,000 invested for 45 years in common stocks and \$20,000 invested for 45 years in bonds. Assume a 12% annual return for common stocks and a 6% annual return for bonds.

$$\begin{aligned}\text{Common stocks:} \\ \text{Future value} &= \text{Present sum} \times (1 + \text{Interest rate})^t \\ &= \$10,000 \times (1 + 0.12)^{45} \\ &= \$1,639,876.04 \\ \text{Bonds:} \\ \text{Future value} &= \text{Present sum} \times (1 + \text{Interest rate})^t \\ &= \$20,000 \times (1 + 0.06)^{45} \\ &= \$275,292.22\end{aligned}$$

Hirshey - Chapter 01 #60

61. In 2004, the Johnson Controls had a net income of \$813.5 million on revenue of \$27.1 billion, and had debt of \$2.79 billion and stockholders' equity of \$5.58 billion. What was Johnson Control's return on equity for 2005?

$$\begin{aligned}\text{Return on equity} &= \text{net income}/\text{stockholders' equity} \\ &= \$0.813/\$5.58 = 14.6\%\end{aligned}$$

Hirshey - Chapter 01 #61

62. In late 2004, the Home Depot reported 2004 full-year earnings per share of \$2.26, and the company's stock traded near a price of \$40. What is Home Depot's P/E ratio?

$$\begin{aligned}\text{P/E ratio} &= \text{stock price}/\text{earnings per share} \\ &= \$40/\$2.26 \\ &= 17.70\end{aligned}$$

Hirshey - Chapter 01 #62

63. A young investor begins saving early by investing \$1,000 per year, every year, for 35 years. The investment account earns an annual 10% return.
A. How much will be in the investment account at the end of 35 years?
B. A middle-aged investor has not saved for retirement. He has only 20 years left to invest. If he also invests for a 10% return, how much must he invest each year to equal the amount the young investor will have (from part A.)?

$$\begin{aligned}\text{Part A. Using a business calculator, use:} \\ N=35, I/Y=10, PV=0, PMT=1000, FV== \$271,024.37 \\ \text{Part B. Using a business calculator, use:} \\ N=20, I/Y=10, PV=0, FV=271,024.37, PMT== \$4,731.98\end{aligned}$$

Hirshey - Chapter 01 #63

64. Assuming annual compounding, calculate the future value of a \$10,000 investment earning 8% interest over a period of 27 years.

The future value of a \$10,000 investment earning 8% interest over a period of 27 years can be easily calculated using the formula: $FV = \$10,000 \times (1.08)^{27} = \$79,881$.

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65. Assuming annual compounding, calculate the present value of \$10,000 to be received in 24 years when a 3% rate of return can be earned on investment.

The present value of a \$10,000 investment to be received in 24 years when a 3% rate of return can be earned on investment can be easily calculated using the formula: $PV = \$10,000/(1.03)^{24} = \$4,919$.

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66. Show how the future value of a 10-year \$10,000 investment growing at 6% differs when using annual versus continuous compounding. Explain any differences.

The future value of a 10-year \$10,000 investment earning 6% interest with annual compounding can be easily calculated using the formula: $FV = \$10,000 \times (1.06)^{10} = \$17,908$. Using continuous compounding this value is $FV = \$10,000 \times e^{(0.06)(10)} = \$18,221$. Continuous compounding yields a larger result given more "interest on interest."

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67. 13D filings tell shareholders about big investors buying 5% or more of the company. Why might this information be useful?

Many large investors conduct thorough research before buying a large portion of any company. After they purchase a large chunk of stock, they often work with the company to make it more successful. When news comes out that value investor Warren Buffett buys into a company, the stock price often climbs as other investors take notice of the company.

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68. Form 144 filings tell shareholders about insiders who intend to sell shares in the company. What kind of signal does this information send to shareholders?

Corporate managers often receive compensation in stock and stock options. Those managers may sell the stock because they wish to improve their lifestyle, diversify their holds, or have low expectations for the company. Shareholders must try to determine which of these reasons is causing the manager to sell. There are many examples where insiders sold their shares when the stock price was high, only to see the price fall over the next few years. On the other hand, someone like Bill Gates, Chairman of Microsoft sell stock every quarter. He does this to try and diversify the billions of dollars of holdings he has of Microsoft stock.

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ch1 Summary

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