

# ch01

Student: \_\_\_\_\_

1. The total dollar return on a share of stock is defined as the:
  - A. change in the price of the stock over a period of time.
  - B. dividend income divided by the beginning price per share.
  - C. capital gain or loss plus any dividend income.
  - D. change in the stock price divided by the original stock price.
  - E. annual dividend income received.
2. The dividend yield is defined as the annual dividend expressed as a percentage of the:
  - A. average stock price.
  - B. initial stock price.
  - C. ending stock price.
  - D. total annual return.
  - E. capital gain.
3. The capital gains yield is equal to:
  - A.  $(P_t - P_{t+1} + D_{t+1})/P_{t+1}$ .
  - B.  $(P_{t+1} - P_t + D_t)/P_t$ .
  - C.  $D_{t+1}/P_t$ .
  - D.  $(P_{t+1} - P_t)/P_t$ .
  - E.  $(P_{t+1} - P_t)/P_{t+1}$ .
4. When the total return on an investment is expressed on a per-year basis it is called the:
  - A. capital gains yield.
  - B. dividend yield.
  - C. holding period return.
  - D. effective annual return.
  - E. initial return.
5. The risk-free rate is:
  - A. another term for the dividend yield.
  - B. defined as the increase in the value of a share of stock over time.
  - C. the rate of return earned on an investment in a firm that you personally own.
  - D. defined as the total of the capital gains yield plus the dividend yield.
  - E. the rate of return on a riskless investment.
6. The rate of return earned on a U.S. Treasury bill is frequently used as a proxy for the:
  - A. risk premium.
  - B. deflated rate of return.
  - C. risk-free rate.
  - D. expected rate of return.
  - E. market rate of return.
7. The risk premium is defined as the rate of return on:
  - A. a risky asset minus the risk-free rate.
  - B. the overall market.
  - C. a U.S. Treasury bill.
  - D. a risky asset minus the inflation rate.
  - E. a riskless investment.

8. The additional return earned for accepting risk is called the:
  - A. inflated return.
  - B. capital gains yield.
  - C. real return.
  - D. riskless rate.
  - E. risk premium.
  
9. The standard deviation is a measure of:
  - A. volatility.
  - B. total return.
  - C. capital gains.
  - D. changes in dividend yields.
  - E. changes in the capital gains rate.
  
10. A frequency distribution, which is completely defined by its average (mean) and standard deviation, is referred to as a(n):
  - A. normal distribution.
  - B. variance distribution.
  - C. expected rate of return.
  - D. average geometric return.
  - E. average arithmetic return.
  
11. The arithmetic average return is the:
  - A. summation of the returns for a number of years,  $t$ , divided by  $(t - 1)$ .
  - B. compound total return for a period of years,  $t$ , divided by  $t$ .
  - C. average compound return earned per year over a multiyear period.
  - D. average squared return earned in a single year.
  - E. return earned in an average year over a multiyear period.
  
12. The average compound return earned per year over a multiyear period is called the:
  - A. total return
  - B. average capital gains yield
  - C. variance
  - D. arithmetic average return
  - E. geometric average return
  
13. The average compound return earned per year over a multiyear period when inflows and outflows are considered is called the:
  - A. total return.
  - B. average capital gains yield.
  - C. dollar-weighted average return.
  - D. arithmetic average return.
  - E. geometric average return.
  
14. Which one of the following statements is correct concerning the dividend yield and the total return?
  - A. The dividend yield can be zero while the total return must be a positive value.
  - B. The total return can be negative but the dividend yield cannot be negative.
  - C. The total return must be greater than the dividend yield.
  - D. The total return plus the capital gains yield is equal to the dividend yield.
  - E. The dividend yield exceeds the total return when a stock increases in value.

15. An annualized return:
- A. is less than a holding period return when the holding period is less than one year.
  - B. is expressed as the summation of the capital gains yield and the dividend yield on an investment.
  - C. is expressed as the capital gains yield that would have been realized if an investment had been held for a twelve-month period.
  - D. is computed as  $(1 + \text{holding period percentage return})^m$ , where  $m$  is the number of holding periods in a year.
  - E. is computed as  $(1 + \text{holding period percentage return})^m$ , where  $m$  is the number of months in the holding period.
16. Stacey purchased 300 shares of Coulter Industries stock and held it for 4 months before reselling it. What is the value of "m" when computing the annualized return on this investment?
- A. .25
  - B. .33
  - C. .40
  - D. 3.00
  - E. 4.00
17. Capital gains are included in the return on an investment:
- A. when either the investment is sold or the investment has been owned for at least one year.
  - B. only if the investment is sold and the capital gain is realized.
  - C. whenever dividends are paid.
  - D. whether or not the investment is sold.
  - E. only if the investment incurs a loss in value or is sold.
18. When we refer to the rate of return on an investment, we are generally referring to the:
- A. capital gains yield.
  - B. effective annual rate of return.
  - C. total percentage return.
  - D. dividend yield.
  - E. annualized dividend yield.
19. Which one of the following should be used to compare the overall performance of three different investments?
- A. holding period dollar return
  - B. capital gains yield
  - C. dividend yield
  - D. holding period percentage return
  - E. effective annual return
20. If you multiply the number of shares of outstanding stock for a firm by the price per share, you are computing the firm's:
- A. equity ratio.
  - B. total book value.
  - C. market share.
  - D. market capitalization.
  - E. time value.
21. Which one of the following is considered the best method of comparing the returns on various- sized investments?
- A. total dollar return
  - B. real dollar return
  - C. absolute dollar return
  - D. percentage return
  - E. variance return

22. Which one of the following had the highest average return for the period 1926-2006?
- A. large-company stocks
  - B. U.S. Treasury bills
  - C. long-term government bonds
  - D. small-company stocks
  - E. long-term corporate bonds
23. Which one of the following statements is correct based on the historical returns for the period 1926-2009?
- A. For the period, Treasury bills yielded a higher rate of return than long-term government bonds.
  - B. The inflation rate exceeded the rate of return on Treasury bills during some years.
  - C. Small-company stocks outperformed large-company stocks every year during the period.
  - D. Bond prices, in general, were more volatile than stock prices.
  - E. For the period, large-company stocks outperformed small-company stocks.
24. Which category(ies) of investments had an annual rate of return that exceeded 100 percent for at least one year during the period 1926-2009?
- A. only large-company stocks
  - B. both large-company and small-company stocks
  - C. only small-company stocks
  - D. corporate bonds, large-company stocks, and small-company stocks
  - E. No category earned an annual return in excess of 100 percent for any given year during the period.
25. For the period 1926-2009, the annual return on large-company stocks:
- A. was negative following every three-year period of positive returns.
  - B. was only negative for two or more consecutive years during the Great Depression.
  - C. remained negative for at least two consecutive years anytime that it was negative.
  - D. never exceeded a positive 30 percent nor lost more than 20 percent.
  - E. was unpredictable based on the prior year's performance.
26. Which one of the following had the highest risk premium for the period 1926-2009?
- A. U.S. Treasury bills
  - B. long-term government bonds
  - C. large-company stocks
  - D. small-company stocks
  - E. intermediate-term government bonds
27. Based on the period 1926-2006, the risk premium for U.S. Treasury bills was:
- A. 0.0 percent.
  - B. 1.2 percent.
  - C. 2.0 percent.
  - D. 2.4 percent.
  - E. 2.7 percent.
28. Based on the period of 1926-2009, the risk premium for small-company stocks averaged:
- A. 12.3 percent.
  - B. 13.9 percent.
  - C. 15.0 percent.
  - D. 16.8 percent.
  - E. 17.4 percent.
29. The average risk premium on large-company stocks for the period 1926-2009 was:
- A. 6.7 percent.
  - B. 7.9 percent.
  - C. 8.5 percent.
  - D. 12.3 percent.
  - E. 13.6 percent.

30. The average risk premium on long-term corporate bonds for the period 1926-2009 was:
- A. 2.4 percent.
  - B. 2.7 percent.
  - C. 3.3 percent.
  - D. 3.7 percent.
  - E. 3.9 percent.
31. Which one of the following had the narrowest bell curve for the period 1926-2009?
- A. large-company stocks
  - B. long-term corporate bonds
  - C. long-term government bonds
  - D. small-company stocks
  - E. U. S. Treasury bills
32. Which one of the following had the greatest volatility of returns for the period 1926-2009?
- A. large-company stocks
  - B. U.S. Treasury bills
  - C. long-term government bonds
  - D. small-company stocks
  - E. long-term corporate bonds
33. Which one of the following had the smallest standard deviation of returns for the period 1926-2009?
- A. large-company stocks
  - B. small-company stocks
  - C. long-term government bonds
  - D. intermediate-term government bonds
  - E. long-term corporate bonds
34. For the period 1926-2009, long-term government bonds had an average return that \_\_\_\_\_ the average return on long-term corporate bonds while having a standard deviation that \_\_\_\_\_ the standard deviation of the long-term corporate bonds.
- A. exceeded; was less than
  - B. exceeded; equaled
  - C. exceeded; exceeded
  - D. was less than; exceeded
  - E. was less than; was less than
35. The mean plus or minus one standard deviation defines the \_\_\_\_\_ percent probability range of a normal distribution.
- A. 50
  - B. 68
  - C. 82
  - D. 90
  - E. 95
36. Assume you own a portfolio that is invested 50 percent in large-company stocks and 50 percent in corporate bonds. If you want to increase the potential annual return on this portfolio, you could:
- A. decrease the investment in stocks and increase the investment in bonds.
  - B. replace the corporate bonds with intermediate-term government bonds.
  - C. replace the corporate bonds with Treasury bills.
  - D. increase the standard deviation of the portfolio.
  - E. reduce the expected volatility of the portfolio.
37. Which one of the following statements is correct?
- A. The standard deviation of the returns on Treasury bills is zero.
  - B. Large-company stocks are historically riskier than small-company stocks.
  - C. The variance is a means of measuring the volatility of returns on an investment.
  - D. A risky asset will always have a higher annual rate of return than a riskless asset.
  - E. There is an indirect relationship between risk and return.

38. The wider the distribution of an investment's returns over time, the \_\_\_\_\_ the expected average rate of return and the \_\_\_\_\_ the expected volatility of those returns.
- A. higher; higher
  - B. higher; lower
  - C. lower; higher
  - D. lower; lower
  - E. The distribution of returns does not affect the expected average rate of return.
39. Which one of the following should be used as the mean return when you are defining the normal distribution of an investment's annual rates of return?
- A. arithmetic average return for the period
  - B. geometric average return for the period
  - C. total return for the period divided by  $N - 1$
  - D. arithmetic average return for the period divided by  $N - 1$
  - E. geometric average return for the period divided by  $N - 1$
40. The geometric mean return on large-company stocks for the 1926-2009 period:
- A. is approximately equal to the arithmetic mean return plus one-half of the standard deviation.
  - B. exceeds the arithmetic mean return.
  - C. is approximately equal to the arithmetic mean return minus one-half of the standard deviation.
  - D. is approximately equal to the arithmetic mean return plus one-half of the variance.
  - E. is less than the arithmetic mean return.
41. You have owned a stock for seven years. The geometric average return on this investment for those seven years is positive even though the annual rates of return have varied significantly. Given this, you know the arithmetic average return for the period is:
- A. positive but less than the geometric average return.
  - B. less than the geometric return and could be negative, zero, or positive.
  - C. equal to the geometric average return.
  - D. either equal to or greater than the geometric average return.
  - E. greater than the geometric average return.
42. The geometric return on an investment is approximately equal to the arithmetic return:
- A. plus half the standard deviation.
  - B. plus half the variance.
  - C. minus half the standard deviation.
  - D. minus half the variance.
  - E. divided by two.
43. BLOOM'S formula is used to:
- A. predict future rates of return.
  - B. convert an arithmetic average return into a geometric average return.
  - C. convert a geometric average return into an arithmetic average return.
  - D. measure past performance in a consistent manner.
  - E. compute the historical mean return over a multi-year period of time.
44. One year ago, you purchased 100 shares of Southern Foods common stock for \$40.7 a share. Today, you sold your shares for \$39.70 a share. During this past year, the stock paid \$1.40 in dividends per share. What is your dividend yield on this investment?
- A. 3.30 percent
  - B. 3.37 percent
  - C. 3.44 percent
  - D. 3.53 percent
  - E. 3.61 percent

45. You purchased a stock for \$29.40 a share, received a dividend of \$0.72 per share, and sold the stock after one year for \$31.30 a share. What was your dividend yield on this investment?
- A. 2.30 percent
  - B. 2.38 percent
  - C. 2.45 percent
  - D. 2.67 percent
  - E. 2.80 percent
46. One year ago, you purchased 300 shares of stock at a cost of \$7,521. The stock paid an annual dividend of \$1.10 per share. Today, you sold those shares for \$28.20 each. What is the capital gains yield on this investment?
- A. 9.96 percent
  - B. 10.44 percent
  - C. 12.49 percent
  - D. 13.33 percent
  - E. 14.75 percent
47. Today, you sold 800 shares of Sky High, Inc., for \$57.60 a share. You bought the shares one year ago at a price of \$61.20 a share. Over the year, you received a total of \$500 in dividends. What is your capital gains yield on this investment?
- A. -6.03 percent
  - B. -5.88 percent
  - C. -4.86 percent
  - D. 6.25 percent
  - E. 7.34 percent
48. One year ago, you purchased 400 shares of Southern Cotton at \$38.40 a share. During the past year, you received a total of \$480 in dividends. Today, you sold your shares for \$41.10 a share. What is your total return on this investment?
- A. 8.79 percent
  - B. 9.64 percent
  - C. 10.16 percent
  - D. 11.64 percent
  - E. 12.76 percent
49. You purchased a stock for \$46.70 a share and resold it one year later. Your total return for the year was 11.2 percent and the dividend yield was 2.8 percent. At what price did you resell the stock?
- A. \$42.78
  - B. \$50.62
  - C. \$51.93
  - D. \$52.08
  - E. \$57.54
50. A stock sold for \$30 at the beginning of the year. The end of year stock price was \$30.50. What is the amount of the annual dividend if the total return for the year was 7.7 percent?
- A. \$1.11
  - B. \$1.38
  - C. \$1.60
  - D. \$1.81
  - E. \$2.31
51. Todd purchased 600 shares of stock at a price of \$68.20 a share and received a dividend of \$1.42 per share. After six months, he resold the stock for \$71.30 a share. What was his total dollar return?
- A. \$1,008
  - B. \$1,860
  - C. \$2,712
  - D. \$3,211
  - E. \$3,400

52. Christine owns a stock that dropped in price from \$42.40 to \$37.20 over the past year. The dividend yield on that stock is 1.4 percent. What is her total return on this investment for the year?
- A. -11.31 percent
  - B. -10.86 percent
  - C. -9.91 percent
  - D. -9.59 percent
  - E. -8.51 percent
53. You have been researching a company and have estimated that the firm's stock will sell for \$44 a share one year from now. You also estimate the stock will have a dividend yield of 2.18 percent. How much are you willing to pay per share today to purchase this stock if you desire a total return of 15 percent on your investment?
- A. \$37.55
  - B. \$38.00
  - C. \$38.24
  - D. \$39.00
  - E. \$40.20
54. Shane purchased a stock this morning at a cost of \$11 a share. He expects to receive an annual dividend of \$.27 a share next year. What will the price of the stock have to be one year from today if Shane is to earn a 15 percent rate of return on this investment?
- A. \$12.38
  - B. \$12.60
  - C. \$12.88
  - D. \$13.14
  - E. \$14.28
55. Elise just sold a stock and realized a 6.2 percent return for a 4-month holding period. What was her annualized rate of return?
- A. 11.98 percent
  - B. 14.78 percent
  - C. 19.78 percent
  - D. 21.29 percent
  - E. 27.20 percent
56. You purchased a stock five months ago for \$40 a share. Today, you sold that stock for \$44 a share. The stock pays no dividends. What was your annualized rate of return?
- A. 23.93 percent
  - B. 24.77 percent
  - C. 25.70 percent
  - D. 26.03 percent
  - E. 27.67 percent
57. Eight months ago, you purchased 300 shares of a non-dividend paying stock for \$27 a share. Today, you sold those shares for \$31.59 a share. What was your annualized rate of return on this investment?
- A. 17.00 percent
  - B. 21.45 percent
  - C. 25.50 percent
  - D. 26.55 percent
  - E. 28.00 percent
58. Jason owned a stock for three months and earned an annualized rate of return of 10.02 percent. What was the holding period return?
- A. 2.37 percent
  - B. 2.42 percent
  - C. 2.46 percent
  - D. 2.67 percent
  - E. 2.72 percent



59. Scott purchased 200 shares of Frozen Foods stock for \$48 a share. Four months later, he received a dividend of \$0.22 a share and also sold the shares for \$42 each. What was his annualized rate of return on this investment?
- A. -44.69 percent
  - B. -40.14 percent
  - C. -33.00 percent
  - D. -32.90 percent
  - E. -28.07 percent
60. A stock has an average historical risk premium of 6.4 percent. The expected risk-free rate for next year is 2.6 percent. What is the expected rate of return on this stock for next year?
- A. 6.50 percent
  - B. 8.86 percent
  - C. 9.00 percent
  - D. 9.34 percent
  - E. 11.70 percent
61. Last year, ABC stock returned 11.4 percent, the risk-free rate was 3.2 percent, and the inflation rate was 2.8 percent. What was the risk premium on ABC stock?
- A. 8.20 percent
  - B. 8.43 percent
  - C. 8.60 percent
  - D. 8.88 percent
  - E. 8.97 percent
62. Over the past four years, Sandstone Quarry stock produced returns of 12.6, 15.2, 9.8, and 2.7 percent, respectively. For the same time period, the risk-free rate 4.6, 5.2, 3.8, and 3.4 percent, respectively. What is the arithmetic average risk premium on this stock during these four years?
- A. 5.13 percent
  - B. 5.25 percent
  - C. 5.50 percent
  - D. 5.83 percent
  - E. 5.97 percent
63. Over the past five years, Teen Clothing stock produced returns of 18.7, 5.8, 7.9, 10.8, and 11.6 percent, respectively. For the same five years, the risk-free rate 5.2, 3.4, 2.8, 3.4, and 3.9 percent, respectively. What is the arithmetic average risk premium on Teen Clothing stock for this time period?
- A. 6.89 percent
  - B. 7.01 percent
  - C. 7.22 percent
  - D. 7.34 percent
  - E. 7.57 percent
64. Over the past ten years, large-company stocks have returned an average of 11.6 percent annually, long-term corporate bonds have earned 6.4 percent, and U. S. Treasury bills have returned 3.2 percent. How much additional risk premium would you have earned if you had invested in large-company stocks rather than long-term corporate bonds over those ten years?
- A. 1.7 percent
  - B. 3.7 percent
  - C. 5.2 percent
  - D. 5.6 percent
  - E. 8.1 percent

65. An asset had annual returns of 12, 18, 6, -9, and 5 percent, respectively, for the last five years. What is the variance of these returns?
- A. .00810
  - B. .01013
  - C. .01065
  - D. .02038
  - E. .04052
66. Over the past five years, Northern Railway stock had annual returns of 11, 15, -5, 8.5, and 18 percent, respectively. What is the variance of these returns?
- A. .00548
  - B. .00685
  - C. .00790
  - D. .01370
  - E. .02740
67. An asset had returns of 6.8, 5.4, 3.6, -4.2, and -1.3 percent, respectively, over the past five years. What is the variance of these returns?
- A. .00173
  - B. .00184
  - C. .00216
  - D. .00240
  - E. .00259
68. An asset had annual returns of 14, 11, -15, 2, and 37 percent, respectively, for the past five years. What is the standard deviation of these returns?
- A. 8.96 percent
  - B. 16.05 percent
  - C. 17.92 percent
  - D. 18.91 percent
  - E. 20.03 percent
69. Over the past four years, a stock produced returns of 13, 6, -5, and 18 percent, respectively. What is the standard deviation of these returns?
- A. 8.63 percent
  - B. 9.93 percent
  - C. 9.97 percent
  - D. 10.11 percent
  - E. 10.15 percent
70. Uptown Industries common stock had returns of 9.2, 11.3, 10.6, and 5.4 percent, respectively, over the past four years. What is the standard deviation of these returns?
- A. 2.07 percent
  - B. 2.38 percent
  - C. 2.41 percent
  - D. 2.59 percent
  - E. 2.63 percent
71. An asset has an average annual historical return of 11.6 percent and a standard deviation of 17.8 percent. What range of returns would you expect to see 95 percent of the time?
- A. -41.8 to +65.0 percent
  - B. -34.4 to +53.6 percent
  - C. -24.0 to +47.2 percent
  - D. -6.2 to +29.4 percent
  - E. -5.4 to +41.0 percent

72. A stock has an average historical return of 14.3 percent and a standard deviation of 18.2 percent. Which range of returns would you expect to see approximately two-thirds of the time?
- A. -23.8 to +53.0 percent
  - B. +4.6 to +33.8 percent
  - C. +5.8 to +31.6 percent
  - D. -3.9 to +32.5 percent
  - E. -5.8 to +31.6 percent
73. An asset has an average historical rate of return of 13.2 percent and a variance of .00972196. What range of returns would you expect to see approximately two-thirds of the time?
- A. -2.28 to +24.48 percent
  - B. -6.52 to +32.92 percent
  - C. -9.58 to +38.8 percent
  - D. +3.34 to +23.06 percent
  - E. +13.1 to + 13.3 percent
74. Jeremy owns a stock that has historically returned 8.5 percent annually with a standard deviation of 11.2 percent. There is only a 0.5 percent chance that the stock will produce a return greater than \_\_\_\_\_ percent in any one year.
- A. 20.9
  - B. 22.9
  - C. 32.2
  - D. 42.1
  - E. 54.8
75. Jefferson Mills stock produced returns of 14.8, 22.6, 5.9, and 9.7 percent, respectively, over the past four years. During those same years, U.S. Treasury bills returned 3.8, 4.6, 4.8, and 4.0 percent, respectively, for the same time period. What is the variance of the risk premiums on Jefferson Mills stock for these four years?
- A. .00298
  - B. .00196
  - C. .00396
  - D. .00478
  - E. .00528
76. Over the past four years, the common stock of JL Steel Co. produced annual returns of 7.2, 4.8, 10.2, and 12.6 percent, respectively. **During those same years, U.S. Treasury bills returned** 3.2, 3.4, 4.2, and 4.5 percent, respectively. What is the standard deviation of the risk premium on JL Steel Co. stock for this time period?
- A. 2.23 percent
  - B. 2.86 percent
  - C. 3.29 percent
  - D. 4.46 percent
  - E. 4.61 percent
77. Big Town Markets common stock returned 13.8, 14.2, 9.7, 5.3, and 12.2 percent, respectively, over the past five years. What is the arithmetic average return?
- A. 10.99 percent
  - B. 11.04 percent
  - C. 11.56 percent
  - D. 12.20 percent
  - E. 13.80 percent

78. Over the past four years, Hi-Tech Development stock returned 36.1, 42.9, 15.4, and -33.2 percent annually. What is the arithmetic average return?
- A. 15.30 percent
  - B. 17.67 percent
  - C. 20.53 percent
  - D. 24.20 percent
  - E. 32.25 percent
79. You own a stock that has produced an arithmetic average return of 7.8 percent over the past five years. The annual returns for the first four years were 16, 11, -19, and 3 percent, respectively. What was the rate of return on the stock in year five?
- A. -5.00 percent
  - B. 2.75 percent
  - C. 6.25 percent
  - D. 28.00 percent
  - E. 32.00 percent
80. An asset had annual returns of 19, -38, -17, 25, and 5 percent, respectively, over the past five years. What is the arithmetic average return?
- A. -1.2 percent
  - B. 0.8 percent
  - C. 1.2 percent
  - D. 1.6 percent
  - E. 2.3 percent
81. Celsius stock had year end prices of \$42, \$37, \$44, and \$46 over the past four years, respectively. What is the arithmetic average rate of return?
- A. 3.17 percent
  - B. 3.85 percent
  - C. 4.28 percent
  - D. 10.63 percent
  - E. 11.79 percent
82. Black Stone Mines stock returned 8, 16, -8, and 12 percent over the past four years, respectively. What is the geometric average return?
- A. 6.59 percent
  - B. 7.36 percent
  - C. 7.75 percent
  - D. 9.94 percent
  - E. 10.33 percent
83. You invested \$5,000 eight years ago. The arithmetic average return on your investment is 10.6 percent and the geometric average return is 10.23 percent. What is the value of your portfolio today?
- A. \$9,092
  - B. \$10,623
  - C. \$10,899
  - D. \$10,947
  - E. \$11,195
84. Jeanette invested \$12,000 four years ago. Her arithmetic average return on this investment is 8.72 percent, and her geometric average return is 8.31 percent. What is Jeanette's portfolio worth today?
- A. \$13,989
  - B. \$14,203
  - C. \$16,409
  - D. \$16,514
  - E. \$16,766

85. A stock produced annual returns of 5, -21, 11, 42, and 4 percent over the past five years, respectively. What is the geometric average return?
- A. 5.78 percent
  - B. 6.03 percent
  - C. 6.34 percent
  - D. 7.21 percent
  - E. 8.20 percent
86. Over the past five years, an investment produced annual returns of 17, 22, -19, 3, and 15 percent, respectively. What is the geometric average return?
- A. 5.42 percent
  - B. 6.49 percent
  - C. 8.00 percent
  - D. 15.60 percent
  - E. 16.00 percent
87. A portfolio had an original value of \$7,400 seven years ago. The current value of the portfolio is \$11,898. What is the average geometric return on this portfolio?
- A. 7.02 percent
  - B. 7.47 percent
  - C. 7.59 percent
  - D. 7.67 percent
  - E. 7.88 percent
88. An initial investment of \$25,000 forty years ago is worth \$1,533,913 today. What is the geometric average return on this investment?
- A. 9.47 percent
  - B. 10.84 percent
  - C. 11.23 percent
  - D. 11.47 percent
  - E. 12.08 percent
89. A stock had year end prices of \$24, \$27, \$32, and \$26 over the past four years, respectively. What is the geometric average return?
- A. 2.02 percent
  - B. 2.18 percent
  - C. 2.55 percent
  - D. 2.70 percent
  - E. 2.81 percent
90. The geometric return on a stock over the past 10 years was 8.42 percent. The arithmetic return over the same period was 9.02 percent. What is the best estimate of the average return on this stock over the next 5 years?
- A. 8.75 percent
  - B. 9.05 percent
  - C. 9.08 percent
  - D. 9.13 percent
  - E. 9.47 percent
91. The geometric return on an asset over the past 12 years has been 13.47 percent. The arithmetic return over the same period was 13.86 percent. What is the best estimate of the average return on this asset over the next 5 years?
- A. 13.47 percent
  - B. 13.67 percent
  - C. 13.72 percent
  - D. 13.81 percent
  - E. 13.86 percent

92. A stock has an average arithmetic return of 12.55 percent and an average geometric return of 12.40 percent based on the annual returns for the last 15 years. What is projected average annual return on this stock for the next 10 years?
- 12.17 percent
  - 12.21 percent
  - 12.38 percent
  - 12.50 percent
  - 12.69 percent
93. Lisa owns a stock that has an average geometric return of 11.34 percent and an average arithmetic return of 11.51 percent over the past six years. What average annual rate of return should Lisa expect to earn over the next four years?
- 11.38 percent
  - 11.41 percent
  - 11.44 percent
  - 11.47 percent
  - 11.51 percent
94. Tom decides to begin investing some portion of his annual bonus, beginning this year with \$5,000. In the first year he earns a 10% return and adds \$3,500 to his investment. In the second his portfolio loses 5% but, sticking to his plan, he adds \$500 to his portfolio. In this year his portfolio returns 2%. What is Tom's dollar-weighted average return on his investments?
- 0.34 percent
  - 1.02 percent
  - 1.54 percent
  - 2.23 percent
  - 2.58 percent
95. Bill has been adding funds to his investment account each year for the past 3 years. He started with an initial investment of \$1,000. After earning a 10% return the first year, he added \$3,000 to his portfolio. In this year his investments lost 5%. Undeterred, Bill added \$2,000 the next year and earned a 2% return. Last year, discouraged by the recent results, he only added \$500 to his portfolio, but in this final year his investments earned 8%. What was Bill's dollar-weighted average return for his investments?
- 1.5 percent
  - 2.0 percent
  - 2.5 percent
  - 3.0 percent
  - 3.5 percent
96. Jim began his investing program with a \$4000 initial investment. The table below recaps his returns each year as well as the amounts he added to his investment account. What is his dollar-weighted average

TIME	INVESTMENT	RETURN
0	\$4,000	10%
1	3,000	-5%
2	500	2%
3	2,000	8%
4	1,000	-3%

return?

- 0.5 percent
- 0.8 percent
- 1.0 percent
- 1.2 percent
- 1.5 percent

97. Jim began his investing program with a \$4000 initial investment. The table below recaps his returns each year as well as the amounts he added to his investment account. What is his dollar-weighted average

<u>TIME</u>	<u>INVESTMENT</u>	<u>RETURN</u>
0	\$4,000	10%
1	2,800	-5%
2	900	2%
3	1,600	8%
4	2,100	-3%
5	2,400	6%

return?

- A. 1.6 percent
  - B. 2.2 percent
  - C. 2.6 percent
  - D. 3.2 percent
  - E. 3.6 percent
98. For the period 1926-2009, small-cap stocks outperformed large-cap stocks by a significant amount. Given this, why do investors still purchase large-cap stocks?
99. You have studied the historical returns and risks of various securities over the period of 1926-2009. Describe the historical returns and risks associated with bonds as compared to stocks over that time period.
100. We have studied three different "average return measures" - the arithmetic average return, the geometric average return and the dollar-weighted average return. Briefly outline what information each metric provides.

## ch01 Key

1. The total dollar return on a share of stock is defined as the:
- A. change in the price of the stock over a period of time.
  - B. dividend income divided by the beginning price per share.
  - C.** capital gain or loss plus any dividend income.
  - D. change in the stock price divided by the original stock price.
  - E. annual dividend income received.

See Section 1.1

*Blooms: Knowledge*  
*Jordan - Chapter 01 #1*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Total Dollar Return*

2. The dividend yield is defined as the annual dividend expressed as a percentage of the:
- A. average stock price.
  - B.** initial stock price.
  - C. ending stock price.
  - D. total annual return.
  - E. capital gain.

See Section 1.1

*Blooms: Knowledge*  
*Jordan - Chapter 01 #2*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Dividend Yield*

3. The capital gains yield is equal to:
- A.  $(P_t - P_{t+1} + D_{t+1})/P_{t+1}$ .
  - B.  $(P_{t+1} - P_t + D_t)/P_t$ .
  - C.  $D_{t+1}/P_t$ .
  - D.**  $(P_{t+1} - P_t)/P_t$ .
  - E.  $(P_{t+1} - P_t)/P_{t+1}$ .

See Section 1.1

*Blooms: Knowledge*  
*Jordan - Chapter 01 #3*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Capital Gains Yield*



4. When the total return on an investment is expressed on a per-year basis it is called the:
- A. capital gains yield.
  - B. dividend yield.
  - C. holding period return.
  - D.** effective annual return.
  - E. initial return.

See Section 1.1

*Blooms: Knowledge  
Jordan - Chapter 01 #4  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.1  
Topic: Effective Annual Return*

5. The risk-free rate is:
- A. another term for the dividend yield.
  - B. defined as the increase in the value of a share of stock over time.
  - C. the rate of return earned on an investment in a firm that you personally own.
  - D. defined as the total of the capital gains yield plus the dividend yield.
  - E.** the rate of return on a riskless investment.

See Section 1.3

*Blooms: Knowledge  
Jordan - Chapter 01 #5  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.3  
Topic: Risk-Free Rate*

6. The rate of return earned on a U.S. Treasury bill is frequently used as a proxy for the:
- A. risk premium.
  - B. deflated rate of return.
  - C.** risk-free rate.
  - D. expected rate of return.
  - E. market rate of return.

See Section 1.3

*Blooms: Knowledge  
Jordan - Chapter 01 #6  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.3  
Topic: Risk-Free Rate*

7. The risk premium is defined as the rate of return on:
- A.** a risky asset minus the risk-free rate.
  - B. the overall market.
  - C. a U.S. Treasury bill.
  - D. a risky asset minus the inflation rate.
  - E. a riskless investment.

See Section 1.3

*Blooms: Knowledge  
Jordan - Chapter 01 #7  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.3  
Topic: Risk Premium*

8. The additional return earned for accepting risk is called the:
- A. inflated return.
  - B. capital gains yield.
  - C. real return.
  - D. riskless rate.
  - E. risk premium.**

See Section 1.3

*Blooms: Knowledge  
Jordan - Chapter 01 #8  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.3  
Topic: Risk Premium*

9. The standard deviation is a measure of:
- A. volatility.**
  - B. total return.
  - C. capital gains.
  - D. changes in dividend yields.
  - E. changes in the capital gains rate.

See Section 1.4

*Blooms: Knowledge  
Jordan - Chapter 01 #9  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.4  
Topic: Standard Deviation*

10. A frequency distribution, which is completely defined by its average (mean) and standard deviation, is referred to as a(n):
- A. normal distribution.**
  - B. variance distribution.
  - C. expected rate of return.
  - D. average geometric return.
  - E. average arithmetic return.

See Section 1.4

*Blooms: Knowledge  
Jordan - Chapter 01 #10  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.4  
Topic: Normal Distribution*

11. The arithmetic average return is the:
- A. summation of the returns for a number of years,  $t$ , divided by  $(t - 1)$ .
  - B. compound total return for a period of years,  $t$ , divided by  $t$ .
  - C. average compound return earned per year over a multiyear period.
  - D. average squared return earned in a single year.
  - E. return earned in an average year over a multiyear period.**

See Section 1.5

*Blooms: Knowledge  
Jordan - Chapter 01 #11  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.5  
Topic: Arithmetic Average Return*

12. The average compound return earned per year over a multiyear period is called the:
- A. total return
  - B. average capital gains yield
  - C. variance
  - D. arithmetic average return
  - E. geometric average return**

See Section 1.5

*Blooms: Knowledge*  
*Jordan - Chapter 01 #12*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Geometric Average Return*

13. The average compound return earned per year over a multiyear period when inflows and outflows are considered is called the:
- A. total return.
  - B. average capital gains yield.
  - C. dollar-weighted average return.**
  - D. arithmetic average return.
  - E. geometric average return.

See Section 1.5

*Blooms: Knowledge*  
*Jordan - Chapter 01 #13*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Dollar-Weighted Average Return*

14. Which one of the following statements is correct concerning the dividend yield and the total return?
- A. The dividend yield can be zero while the total return must be a positive value.
  - B. The total return can be negative but the dividend yield cannot be negative.**
  - C. The total return must be greater than the dividend yield.
  - D. The total return plus the capital gains yield is equal to the dividend yield.
  - E. The dividend yield exceeds the total return when a stock increases in value.

See Section 1.1

*Blooms: Comprehension*  
*Jordan - Chapter 01 #14*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Dividend Yield and Total Return*

15. An annualized return:
- A. is less than a holding period return when the holding period is less than one year.
  - B. is expressed as the summation of the capital gains yield and the dividend yield on an investment.
  - C. is expressed as the capital gains yield that would have been realized if an investment had been held for a twelve-month period.
  - D.** is computed as  $(1 + \text{holding period percentage return})^m$ , where m is the number of holding periods in a year.
  - E. is computed as  $(1 + \text{holding period percentage return})^m$ , where m is the number of months in the holding period.

See Section 1.1

*Blooms: Comprehension  
Jordan - Chapter 01 #15  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.1  
Topic: Annualized Return*

16. Stacey purchased 300 shares of Coulter Industries stock and held it for 4 months before reselling it. What is the value of "m" when computing the annualized return on this investment?
- A. .25
  - B. .33
  - C. .40
  - D.** 3.00
  - E. 4.00

See Section 1.1

*Blooms: Comprehension  
Jordan - Chapter 01 #16  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.1  
Topic: Annualized Return*

17. Capital gains are included in the return on an investment:
- A. when either the investment is sold or the investment has been owned for at least one year.
  - B. only if the investment is sold and the capital gain is realized.
  - C. whenever dividends are paid.
  - D.** whether or not the investment is sold.
  - E. only if the investment incurs a loss in value or is sold.

See Section 1.1

*Blooms: Comprehension  
Jordan - Chapter 01 #17  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.1  
Topic: Capital Gains*

18. When we refer to the rate of return on an investment, we are generally referring to the:
- A. capital gains yield.
  - B. effective annual rate of return.
  - C.** total percentage return.
  - D. dividend yield.
  - E. annualized dividend yield.

See Section 1.1

*Blooms: Comprehension  
Jordan - Chapter 01 #18  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.1  
Topic: Rates of Return*

19. Which one of the following should be used to compare the overall performance of three different investments?
- A. holding period dollar return
  - B. capital gains yield
  - C. dividend yield
  - D. holding period percentage return
  - E.** effective annual return

See Section 1.1

*Blooms: Comprehension  
Jordan - Chapter 01 #19  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.1  
Topic: Effective Annual Rate*

20. If you multiply the number of shares of outstanding stock for a firm by the price per share, you are computing the firm's:
- A. equity ratio.
  - B. total book value.
  - C. market share.
  - D.** market capitalization.
  - E. time value.

See Section 1.2

*Blooms: Comprehension  
Jordan - Chapter 01 #20  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.2  
Topic: Market Capitalization*

21. Which one of the following is considered the best method of comparing the returns on various- sized investments?
- A. total dollar return
  - B. real dollar return
  - C. absolute dollar return
  - D. percentage return**
  - E. variance return

See Section 1.1

*Blooms: Comprehension  
Jordan - Chapter 01 #21  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Core  
Section: 1.1  
Topic: Rates of Return*

22. Which one of the following had the highest average return for the period 1926-2006?
- A. large-company stocks
  - B. U.S. Treasury bills
  - C. long-term government bonds
  - D. small-company stocks**
  - E. long-term corporate bonds

See Section 1.2

*Blooms: Comprehension  
Jordan - Chapter 01 #22  
Learning Objective: 01-02 The historical returns on various important types of investments.  
Level of Difficulty: Core  
Section: 1.2  
Topic: Historical Returns*

23. Which one of the following statements is correct based on the historical returns for the period 1926-2009?
- A. For the period, Treasury bills yielded a higher rate of return than long-term government bonds.
  - B. The inflation rate exceeded the rate of return on Treasury bills during some years.**
  - C. Small-company stocks outperformed large-company stocks every year during the period.
  - D. Bond prices, in general, were more volatile than stock prices.
  - E. For the period, large-company stocks outperformed small-company stocks.

See Section 1.2

*Blooms: Comprehension  
Jordan - Chapter 01 #23  
Learning Objective: 01-02 The historical returns on various important types of investments.  
Level of Difficulty: Core  
Section: 1.2  
Topic: Historical Returns*

24. Which category(ies) of investments had an annual rate of return that exceeded 100 percent for at least one year during the period 1926-2009?
- A. only large-company stocks
  - B. both large-company and small-company stocks
  - C.** only small-company stocks
  - D. corporate bonds, large-company stocks, and small-company stocks
  - E. No category earned an annual return in excess of 100 percent for any given year during the period.

See Section 1.2

*Blooms: Comprehension  
Jordan - Chapter 01 #24  
Learning Objective: 01-02 The historical returns on various important types of investments.  
Level of Difficulty: Core  
Section: 1.2  
Topic: Historical Returns*

25. For the period 1926-2009, the annual return on large-company stocks:
- A. was negative following every three-year period of positive returns.
  - B. was only negative for two or more consecutive years during the Great Depression.
  - C. remained negative for at least two consecutive years anytime that it was negative.
  - D. never exceeded a positive 30 percent nor lost more than 20 percent.
  - E.** was unpredictable based on the prior year's performance.

See Section 1.2

*Blooms: Comprehension  
Jordan - Chapter 01 #25  
Learning Objective: 01-02 The historical returns on various important types of investments.  
Level of Difficulty: Intermediate  
Section: 1.2  
Topic: Historical Returns*

26. Which one of the following had the highest risk premium for the period 1926-2009?
- A. U.S. Treasury bills
  - B. long-term government bonds
  - C. large-company stocks
  - D.** small-company stocks
  - E. intermediate-term government bonds

See Section 1.3

*Blooms: Comprehension  
Jordan - Chapter 01 #26  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.3  
Topic: Risk Premium*

27. Based on the period 1926-2006, the risk premium for U.S. Treasury bills was:
- A.** 0.0 percent.
  - B. 1.2 percent.
  - C. 2.0 percent.
  - D. 2.4 percent.
  - E. 2.7 percent.

See Section 1.3

*Blooms: Comprehension  
Jordan - Chapter 01 #27  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.3  
Topic: Risk Premium*

28. Based on the period of 1926-2009, the risk premium for small-company stocks averaged:
- A. 12.3 percent.
  - B.** 13.9 percent.
  - C. 15.0 percent.
  - D. 16.8 percent.
  - E. 17.4 percent.

See Section 1.3

*Blooms: Comprehension  
Jordan - Chapter 01 #28  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.3  
Topic: Risk Premium*

29. The average risk premium on large-company stocks for the period 1926-2009 was:
- A. 6.7 percent.
  - B.** 7.9 percent.
  - C. 8.5 percent.
  - D. 12.3 percent.
  - E. 13.6 percent.

See Section 1.3

*Blooms: Comprehension  
Jordan - Chapter 01 #29  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.3  
Topic: Risk Premium*

30. The average risk premium on long-term corporate bonds for the period 1926-2009 was:
- A. 2.4 percent.
  - B.** 2.7 percent.
  - C. 3.3 percent.
  - D. 3.7 percent.
  - E. 3.9 percent.

See Section 1.3

*Blooms: Comprehension  
Jordan - Chapter 01 #30  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.3  
Topic: Risk Premium*

31. Which one of the following had the narrowest bell curve for the period 1926-2009?
- A. large-company stocks
  - B. long-term corporate bonds
  - C. long-term government bonds
  - D. small-company stocks
  - E.** U. S. Treasury bills

See Section 1.4

*Blooms: Comprehension  
Jordan - Chapter 01 #31  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.4  
Topic: Historical Risk*



32. Which one of the following had the greatest volatility of returns for the period 1926-2009?
- A. large-company stocks
  - B. U.S. Treasury bills
  - C. long-term government bonds
  - D.** small-company stocks
  - E. long-term corporate bonds

See Section 1.4

*Blooms: Comprehension  
Jordan - Chapter 01 #32  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.4  
Topic: Historical Risk*

33. Which one of the following had the smallest standard deviation of returns for the period 1926-2009?
- A. large-company stocks
  - B. small-company stocks
  - C. long-term government bonds
  - D. intermediate-term government bonds
  - E.** long-term corporate bonds

See Section 1.4

*Blooms: Comprehension  
Jordan - Chapter 01 #33  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.4  
Topic: Historical Risk*

34. For the period 1926-2009, long-term government bonds had an average return that \_\_\_\_\_ the average return on long-term corporate bonds while having a standard deviation that \_\_\_\_\_ the standard deviation of the long-term corporate bonds.
- A. exceeded; was less than
  - B. exceeded; equaled
  - C. exceeded; exceeded
  - D.** was less than; exceeded
  - E. was less than; was less than

See Section 1.4

*Blooms: Comprehension  
Jordan - Chapter 01 #34  
Learning Objective: 01-04 The relationship between risk and return.  
Level of Difficulty: Intermediate  
Section: 1.4  
Topic: Historical Risk and Return*

35. The mean plus or minus one standard deviation defines the \_\_\_\_\_ percent probability range of a normal distribution.
- A. 50
  - B. 68**
  - C. 82
  - D. 90
  - E. 95

See Section 1.4

*Blooms: Comprehension  
Jordan - Chapter 01 #35  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.4  
Topic: Probability Ranges*

36. Assume you own a portfolio that is invested 50 percent in large-company stocks and 50 percent in corporate bonds. If you want to increase the potential annual return on this portfolio, you could:
- A. decrease the investment in stocks and increase the investment in bonds.
  - B. replace the corporate bonds with intermediate-term government bonds.
  - C. replace the corporate bonds with Treasury bills.
  - D. increase the standard deviation of the portfolio.**
  - E. reduce the expected volatility of the portfolio.

See Section 1.4

*Blooms: Comprehension  
Jordan - Chapter 01 #36  
Learning Objective: 01-04 The relationship between risk and return.  
Level of Difficulty: Intermediate  
Section: 1.4  
Topic: Risk and Return*

37. Which one of the following statements is correct?
- A. The standard deviation of the returns on Treasury bills is zero.
  - B. Large-company stocks are historically riskier than small-company stocks.
  - C. The variance is a means of measuring the volatility of returns on an investment.**
  - D. A risky asset will always have a higher annual rate of return than a riskless asset.
  - E. There is an indirect relationship between risk and return.

See Section 1.4

*Blooms: Comprehension  
Jordan - Chapter 01 #37  
Learning Objective: 01-04 The relationship between risk and return.  
Level of Difficulty: Intermediate  
Section: 1.4  
Topic: Risk and Return*

38. The wider the distribution of an investment's returns over time, the \_\_\_\_\_ the expected average rate of return and the \_\_\_\_\_ the expected volatility of those returns.
- A.** higher; higher
  - B. higher; lower
  - C. lower; higher
  - D. lower; lower
  - E. The distribution of returns does not affect the expected average rate of return.

See Section 1.4

*Blooms: Comprehension  
Jordan - Chapter 01 #38  
Learning Objective: 01-04 The relationship between risk and return.  
Level of Difficulty: Core  
Section: 1.4  
Topic: Risk and Return*

39. Which one of the following should be used as the mean return when you are defining the normal distribution of an investment's annual rates of return?
- A.** arithmetic average return for the period
  - B. geometric average return for the period
  - C. total return for the period divided by  $N - 1$
  - D. arithmetic average return for the period divided by  $N - 1$
  - E. geometric average return for the period divided by  $N - 1$

See Section 1.4

*Blooms: Comprehension  
Jordan - Chapter 01 #39  
Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.4  
Topic: Mean Return*

40. The geometric mean return on large-company stocks for the 1926-2009 period:
- A. is approximately equal to the arithmetic mean return plus one-half of the standard deviation.
  - B. exceeds the arithmetic mean return.
  - C. is approximately equal to the arithmetic mean return minus one-half of the standard deviation.
  - D. is approximately equal to the arithmetic mean return plus one-half of the variance.
  - E.** is less than the arithmetic mean return.

See Section 1.5

*Blooms: Comprehension  
Jordan - Chapter 01 #40  
Learning Objective: 01-02 The historical returns on various important types of investments.  
Level of Difficulty: Core  
Section: 1.5  
Topic: Arithmetic and Geometric Averages*

41. You have owned a stock for seven years. The geometric average return on this investment for those seven years is positive even though the annual rates of return have varied significantly. Given this, you know the arithmetic average return for the period is:
- A. positive but less than the geometric average return.
  - B. less than the geometric return and could be negative, zero, or positive.
  - C. equal to the geometric average return.
  - D. either equal to or greater than the geometric average return.
  - E.** greater than the geometric average return.

See Section 1.5

*Blooms: Comprehension*  
*Jordan - Chapter 01 #41*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Intermediate*  
*Section: 1.5*  
*Topic: Geometric and Arithmetic Returns*

42. The geometric return on an investment is approximately equal to the arithmetic return:
- A. plus half the standard deviation.
  - B. plus half the variance.
  - C. minus half the standard deviation.
  - D.** minus half the variance.
  - E. divided by two.

See Section 1.5

*Blooms: Comprehension*  
*Jordan - Chapter 01 #42*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Geometric and Arithmetic Returns*

43. BLOOM'S formula is used to:
- A.** predict future rates of return.
  - B. convert an arithmetic average return into a geometric average return.
  - C. convert a geometric average return into an arithmetic average return.
  - D. measure past performance in a consistent manner.
  - E. compute the historical mean return over a multi-year period of time.

See Section 1.5

*Blooms: Comprehension*  
*Jordan - Chapter 01 #43*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Blooms Formula*

44. One year ago, you purchased 100 shares of Southern Foods common stock for \$40.7 a share. Today, you sold your shares for \$39.70 a share. During this past year, the stock paid \$1.40 in dividends per share. What is your dividend yield on this investment?
- A. 3.30 percent
  - B. 3.37 percent
  - C. 3.44 percent**
  - D. 3.53 percent
  - E. 3.61 percent

$$\$1.40/\$40.70 = 3.44 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #44*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Dividend Yield*

45. You purchased a stock for \$29.40 a share, received a dividend of \$0.72 per share, and sold the stock after one year for \$31.30 a share. What was your dividend yield on this investment?
- A. 2.30 percent
  - B. 2.38 percent
  - C. 2.45 percent**
  - D. 2.67 percent
  - E. 2.80 percent

$$\$0.72/\$29.40 = 2.45 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #45*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Dividend Yield*

46. One year ago, you purchased 300 shares of stock at a cost of \$7,521. The stock paid an annual dividend of \$1.10 per share. Today, you sold those shares for \$28.20 each. What is the capital gains yield on this investment?
- A. 9.96 percent
  - B. 10.44 percent
  - C. 12.49 percent**
  - D. 13.33 percent
  - E. 14.75 percent

$$[(\$28.20 \times 300) - \$7,521]/\$7,521 = 12.49 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #46*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Capital Gains Yield*

47. Today, you sold 800 shares of Sky High, Inc., for \$57.60 a share. You bought the shares one year ago at a price of \$61.20 a share. Over the year, you received a total of \$500 in dividends. What is your capital gains yield on this investment?
- A. -6.03 percent
  - B. -5.88 percent**
  - C. -4.86 percent
  - D. 6.25 percent
  - E. 7.34 percent

$$(\$57.60 - \$61.20)/\$61.20 = -5.88 \text{ percent}$$

*Blooms: Application  
Jordan - Chapter 01 #47*

*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*

*Level of Difficulty: Core*

*Section: 1.1*

*Topic: Capital Gains Yield*

48. One year ago, you purchased 400 shares of Southern Cotton at \$38.40 a share. During the past year, you received a total of \$480 in dividends. Today, you sold your shares for \$41.10 a share. What is your total return on this investment?
- A. 8.79 percent
  - B. 9.64 percent
  - C. 10.16 percent**
  - D. 11.64 percent
  - E. 12.76 percent

$$[\$41.10 - \$38.40 + (\$480/400)]/\$38.40 = 10.16 \text{ percent}$$

*Blooms: Application  
Jordan - Chapter 01 #48*

*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*

*Level of Difficulty: Core*

*Section: 1.1*

*Topic: Total Return*

49. You purchased a stock for \$46.70 a share and resold it one year later. Your total return for the year was 11.2 percent and the dividend yield was 2.8 percent. At what price did you resell the stock?
- A. \$42.78
  - B. \$50.62**
  - C. \$51.93
  - D. \$52.08
  - E. \$57.54

$$\text{Capital gains yield} = 11.2 \text{ percent} - 2.8 \text{ percent} = 8.4 \text{ percent}$$

$$\$46.70 \times (1 + .084) = \$50.62$$

*Blooms: Application  
Jordan - Chapter 01 #49*

*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*

*Level of Difficulty: Core*

*Section: 1.1*

*Topic: Capital Gains*

50. A stock sold for \$30 at the beginning of the year. The end of year stock price was \$30.50. What is the amount of the annual dividend if the total return for the year was 7.7 percent?
- A. \$1.11
  - B. \$1.38
  - C. \$1.60
  - D. \$1.81**
  - E. \$2.31

$$(\$30.50 - \$30 + D)/\$30 = .077; D = \$1.81$$

*Blooms: Application*  
*Jordan - Chapter 01 #50*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Annual Dividend*

51. Todd purchased 600 shares of stock at a price of \$68.20 a share and received a dividend of \$1.42 per share. After six months, he resold the stock for \$71.30 a share. What was his total dollar return?
- A. \$1,008
  - B. \$1,860
  - C. \$2,712**
  - D. \$3,211
  - E. \$3,400

$$600 \times (\$71.30 - \$68.20 + \$1.42) = \$2,712$$

*Blooms: Application*  
*Jordan - Chapter 01 #51*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Total Return*

52. Christine owns a stock that dropped in price from \$42.40 to \$37.20 over the past year. The dividend yield on that stock is 1.4 percent. What is her total return on this investment for the year?
- A. -11.31 percent
  - B. -10.86 percent**
  - C. -9.91 percent
  - D. -9.59 percent
  - E. -8.51 percent

$$[(\$37.20 - \$42.40)/\$42.40] + .014 = -10.86 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #52*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Total Return*

53. You have been researching a company and have estimated that the firm's stock will sell for \$44 a share one year from now. You also estimate the stock will have a dividend yield of 2.18 percent. How much are you willing to pay per share today to purchase this stock if you desire a total return of 15 percent on your investment?
- A. \$37.55
  - B. \$38.00
  - C. \$38.24
  - D. \$39.00**
  - E. \$40.20

$$.15 = [(\$44 - P_0)/P_0] + .0218; P_0 = \$39$$

*Blooms: Application*  
*Jordan - Chapter 01 #53*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Total Return*

54. Shane purchased a stock this morning at a cost of \$11 a share. He expects to receive an annual dividend of \$.27 a share next year. What will the price of the stock have to be one year from today if Shane is to earn a 15 percent rate of return on this investment?
- A. \$12.38**
  - B. \$12.60
  - C. \$12.88
  - D. \$13.14
  - E. \$14.28

$$.15 = (P_1 - \$11 + \$.27)/\$11; P_1 = \$12.38$$

*Blooms: Application*  
*Jordan - Chapter 01 #54*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Total Return*

55. Elise just sold a stock and realized a 6.2 percent return for a 4-month holding period. What was her annualized rate of return?
- A. 11.98 percent
  - B. 14.78 percent
  - C. 19.78 percent**
  - D. 21.29 percent
  - E. 27.20 percent

$$1 + \text{EAR} = (1 + .062)^{12/4} - 1 = 19.78 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #55*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.1*  
*Topic: Annualized Return*



56. You purchased a stock five months ago for \$40 a share. Today, you sold that stock for \$44 a share. The stock pays no dividends. What was your annualized rate of return?
- A. 23.93 percent
  - B. 24.77 percent
  - C. 25.70 percent**
  - D. 26.03 percent
  - E. 27.67 percent

$$\text{HPR} = (\$44 - \$40)/\$40 = .10$$

$$\text{Annualized rate of return} = (1 + .10)^{12/5} - 1 = 25.70 \text{ percent}$$

*Blooms: Application*

*Jordan - Chapter 01 #56*

*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*

*Level of Difficulty: Intermediate*

*Section: 1.1*

*Topic: Annualized Return*

57. Eight months ago, you purchased 300 shares of a non-dividend paying stock for \$27 a share. Today, you sold those shares for \$31.59 a share. What was your annualized rate of return on this investment?
- A. 17.00 percent
  - B. 21.45 percent
  - C. 25.50 percent
  - D. 26.55 percent**
  - E. 28.00 percent

$$\text{HPR} = (\$31.59 - \$27)/\$27 = .17$$

$$\text{Annualized rate of return} = (1 + .17)^{12/8} - 1 = 26.55 \text{ percent}$$

*Blooms: Application*

*Jordan - Chapter 01 #57*

*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*

*Level of Difficulty: Intermediate*

*Section: 1.1*

*Topic: Annualized Return*

58. Jason owned a stock for three months and earned an annualized rate of return of 10.02 percent. What was the holding period return?
- A. 2.37 percent
  - B. 2.42 percent**
  - C. 2.46 percent
  - D. 2.67 percent
  - E. 2.72 percent

$$\text{Annualized return} = (1 + x)^{12/3} - 1 = .1002; x = 1.1002^{1/4} - 1; x = \text{HPR} = 2.42 \text{ percent}$$

*Blooms: Application*

*Jordan - Chapter 01 #58*

*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*

*Level of Difficulty: Intermediate*

*Section: 1.1*

*Topic: Holding Period Return*

59. Scott purchased 200 shares of Frozen Foods stock for \$48 a share. Four months later, he received a dividend of \$0.22 a share and also sold the shares for \$42 each. What was his annualized rate of return on this investment?
- A. -44.69 percent
  - B. -40.14 percent
  - C. -33.00 percent
  - D. -32.90 percent**
  - E. -28.07 percent

$$\text{HPR} = (\$42 - \$48 + \$0.22)/\$48 = -.12454$$

$$\text{Annualized return} = (1 - .12454)^{12/4} - 1 = -32.90 \text{ percent}$$

*Blooms: Application*

*Jordan - Chapter 01 #59*

*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*

*Level of Difficulty: Intermediate*

*Section: 1.1*

*Topic: Annualized Return*

60. A stock has an average historical risk premium of 6.4 percent. The expected risk-free rate for next year is 2.6 percent. What is the expected rate of return on this stock for next year?
- A. 6.50 percent
  - B. 8.86 percent
  - C. 9.00 percent**
  - D. 9.34 percent
  - E. 11.70 percent

$$\text{Expected return} = 6.4 \text{ percent} + 2.6 \text{ percent} = 9.0 \text{ percent}$$

*Blooms: Application*

*Jordan - Chapter 01 #60*

*Learning Objective: 01-03 The historical risks on various important types of investments.*

*Level of Difficulty: Core*

*Section: 1.3*

*Topic: Expected Return*

61. Last year, ABC stock returned 11.4 percent, the risk-free rate was 3.2 percent, and the inflation rate was 2.8 percent. What was the risk premium on ABC stock?
- A. 8.20 percent**
  - B. 8.43 percent
  - C. 8.60 percent
  - D. 8.88 percent
  - E. 8.97 percent

$$\text{Risk premium} = 11.4 \text{ percent} - 3.2 \text{ percent} = 8.2 \text{ percent}$$

*Blooms: Application*

*Jordan - Chapter 01 #61*

*Learning Objective: 01-03 The historical risks on various important types of investments.*

*Level of Difficulty: Core*

*Section: 1.3*

*Topic: Risk Premium*

62. Over the past four years, Sandstone Quarry stock produced returns of 12.6, 15.2, 9.8, and 2.7 percent, respectively. For the same time period, the risk-free rate 4.6, 5.2, 3.8, and 3.4 percent, respectively. What is the arithmetic average risk premium on this stock during these four years?
- A. 5.13 percent
  - B. 5.25 percent
  - C. 5.50 percent
  - D. 5.83 percent**
  - E. 5.97 percent

$$\text{Average risk premium} = [(.126 - .046) + (.152 - .052) + (.098 - .038) + (.027 - .034)]/4 = 5.83 \text{ percent}$$

*Blooms: Application  
Jordan - Chapter 01 #62*

*Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.3*

*Topic: Average Risk Premium*

63. Over the past five years, Teen Clothing stock produced returns of 18.7, 5.8, 7.9, 10.8, and 11.6 percent, respectively. For the same five years, the risk-free rate 5.2, 3.4, 2.8, 3.4, and 3.9 percent, respectively. What is the arithmetic average risk premium on Teen Clothing stock for this time period?
- A. 6.89 percent
  - B. 7.01 percent
  - C. 7.22 percent**
  - D. 7.34 percent
  - E. 7.57 percent

$$\text{Average risk premium} = [(.187 - .052) + (.058 - .034) + (.079 - .028) + (.108 - .034) + (.116 - .039)]/5 = 7.22 \text{ percent}$$

*Blooms: Application  
Jordan - Chapter 01 #63*

*Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.3*

*Topic: Average Risk Premium*

64. Over the past ten years, large-company stocks have returned an average of 11.6 percent annually, long-term corporate bonds have earned 6.4 percent, and U. S. Treasury bills have returned 3.2 percent. How much additional risk premium would you have earned if you had invested in large-company stocks rather than long-term corporate bonds over those ten years?
- A. 1.7 percent
  - B. 3.7 percent
  - C. 5.2 percent**
  - D. 5.6 percent
  - E. 8.1 percent

$$\text{Additional risk premium} = (.116 - .032) - (.064 - .032) = 5.2 \text{ percent}$$

*Blooms: Application  
Jordan - Chapter 01 #64*

*Learning Objective: 01-03 The historical risks on various important types of investments.  
Level of Difficulty: Core  
Section: 1.3*

*Topic: Risk Premium*

65. An asset had annual returns of 12, 18, 6, -9, and 5 percent, respectively, for the last five years. What is the variance of these returns?
- A. .00810  
**B.** .01013  
 C. .01065  
 D. .02038  
 E. .04052

$$\text{Mean} = (.12 + .18 + .06 - .09 + .05)/5 = .064$$

$$\text{Var} = [(.12 - .064)^2 + (.18 - .064)^2 + (.06 - .064)^2 + (-.09 - .064)^2 + (.05 - .064)^2]/(5 - 1) = .01013$$

*Blooms: Application*  
*Jordan - Chapter 01 #65*  
*Learning Objective: 01-03 The historical risks on various important types of investments.*  
*Level of Difficulty: Core*  
*Section: 1.4*  
*Topic: Variance*

66. Over the past five years, Northern Railway stock had annual returns of 11, 15, -5, 8.5, and 18 percent, respectively. What is the variance of these returns?
- A. .00548  
 B. .00685  
**C.** .00790  
 D. .01370  
 E. .02740

$$\text{Mean} = (.11 + .15 - .05 + .085 + .18)/5 = .095$$

$$\text{Var} = [(.11 - .095)^2 + (.15 - .095)^2 + (-.05 - .095)^2 + (.085 - .095)^2 + (.18 - .095)^2]/(5 - 1) = .0079$$

*Blooms: Application*  
*Jordan - Chapter 01 #66*  
*Learning Objective: 01-03 The historical risks on various important types of investments.*  
*Level of Difficulty: Core*  
*Section: 1.4*  
*Topic: Variance*

67. An asset had returns of 6.8, 5.4, 3.6, -4.2, and -1.3 percent, respectively, over the past five years. What is the variance of these returns?
- A. .00173  
 B. .00184  
**C.** .00216  
 D. .00240  
 E. .00259

$$\text{Mean} = (.068 + .054 + .036 - .042 - .013)/5 = .0206$$

$$\text{Var} = [(.068 - .0206)^2 + (.054 - .0206)^2 + (.036 - .0206)^2 + (-.042 - .0206)^2 + (-.013 - .0206)^2]/(5 - 1) = .00216$$

*Blooms: Application*  
*Jordan - Chapter 01 #67*  
*Learning Objective: 01-03 The historical risks on various important types of investments.*  
*Level of Difficulty: Core*  
*Section: 1.4*  
*Topic: Variance*

68. An asset had annual returns of 14, 11, -15, 2, and 37 percent, respectively, for the past five years. What is the standard deviation of these returns?
- A. 8.96 percent
  - B. 16.05 percent
  - C. 17.92 percent
  - D. 18.91 percent**
  - E. 20.03 percent

$$\text{Mean} = (.14 + .11 - .15 + .02 + .37)/5 = .098$$

$$\text{Var} = [(.14 - .098)^2 + (.11 - .098)^2 + (-.15 - .098)^2 + (.02 - .098)^2 + (.37 - .098)^2]/(5 - 1) = .03577$$

$$\text{Std Dev} = \sqrt{.03577} = 18.91 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #68*  
*Learning Objective: 01-03 The historical risks on various important types of investments.*  
*Level of Difficulty: Core*  
*Section: 1.4*  
*Topic: Standard Deviation*

69. Over the past four years, a stock produced returns of 13, 6, -5, and 18 percent, respectively. What is the standard deviation of these returns?
- A. 8.63 percent
  - B. 9.93 percent
  - C. 9.97 percent**
  - D. 10.11 percent
  - E. 10.15 percent

$$\text{Mean} = (.13 + .06 - .05 + .18)/4 = .08$$

$$\text{Var} = [(.13 - .08)^2 + (.06 - .08)^2 + (-.05 - .08)^2 + (.18 - .08)^2]/(4 - 1) = .009933$$

$$\text{Std Dev} = \sqrt{.009933} = 9.97 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #69*  
*Learning Objective: 01-03 The historical risks on various important types of investments.*  
*Level of Difficulty: Core*  
*Section: 1.4*  
*Topic: Standard Deviation*

70. Uptown Industries common stock had returns of 9.2, 11.3, 10.6, and 5.4 percent, respectively, over the past four years. What is the standard deviation of these returns?
- A. 2.07 percent
  - B. 2.38 percent
  - C. 2.41 percent
  - D. 2.59 percent
  - E. 2.63 percent**

$$\text{Mean} = (.092 + .113 + .106 + .054)/4 = .09125$$

$$\text{Var} = [(.092 - .09125)^2 + (.113 - .09125)^2 + (.106 - .09125)^2 + (.054 - .09125)^2]/(4 - 1) = .000693$$

$$\text{Std Dev} = \sqrt{.000693} = 2.63 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #70*  
*Learning Objective: 01-03 The historical risks on various important types of investments.*  
*Level of Difficulty: Core*  
*Section: 1.4*  
*Topic: Standard Deviation*

71. An asset has an average annual historical return of 11.6 percent and a standard deviation of 17.8 percent. What range of returns would you expect to see 95 percent of the time?
- A. -41.8 to +65.0 percent
  - B. -34.4 to +53.6 percent
  - C.** -24.0 to +47.2 percent
  - D. -6.2 to +29.4 percent
  - E. -5.4 to +41.0 percent

$$\text{Range} = 11.6 \text{ percent} \pm 2(17.8 \text{ percent}) = -24.0 \text{ to } +47.2 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #71*  
*Learning Objective: 01-04 The relationship between risk and return.*  
*Level of Difficulty: Intermediate*  
*Section: 1.4*  
*Topic: Normal Distribution*

72. A stock has an average historical return of 14.3 percent and a standard deviation of 18.2 percent. Which range of returns would you expect to see approximately two-thirds of the time?
- A. -23.8 to +53.0 percent
  - B. +4.6 to +33.8 percent
  - C. +5.8 to +31.6 percent
  - D.** -3.9 to +32.5 percent
  - E. -5.8 to +31.6 percent

$$\text{Range} = 14.3 \text{ percent} \pm 18.2 \text{ percent} = -3.9 \text{ to } + 32.5 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #72*  
*Learning Objective: 01-04 The relationship between risk and return.*  
*Level of Difficulty: Intermediate*  
*Section: 1.4*  
*Topic: Normal Distribution*

73. An asset has an average historical rate of return of 13.2 percent and a variance of .00972196. What range of returns would you expect to see approximately two-thirds of the time?
- A. -2.28 to +24.48 percent
  - B. -6.52 to +32.92 percent
  - C. -9.58 to +38.8 percent
  - D.** +3.34 to +23.06 percent
  - E. +13.1 to + 13.3 percent

$$\text{Range} = .132 \pm (\sqrt{.00972196}) = +3.34 \text{ to } + 23.06 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #73*  
*Learning Objective: 01-04 The relationship between risk and return.*  
*Level of Difficulty: Intermediate*  
*Section: 1.4*  
*Topic: Normal Distribution*

74. Jeremy owns a stock that has historically returned 8.5 percent annually with a standard deviation of 11.2 percent. There is only a 0.5 percent chance that the stock will produce a return greater than \_\_\_\_\_ percent in any one year.
- A. 20.9  
 B. 22.9  
 C. 32.2  
**D. 42.1**  
 E. 54.8

$$\text{Return} = 8.5 \text{ percent} + 3(11.2 \text{ percent}) = 42.1 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #74*  
*Learning Objective: 01-04 The relationship between risk and return.*  
*Level of Difficulty: Intermediate*  
*Section: 1.4*  
*Topic: Normal Distribution*

75. Jefferson Mills stock produced returns of 14.8, 22.6, 5.9, and 9.7 percent, respectively, over the past four years. During those same years, U.S. Treasury bills returned 3.8, 4.6, 4.8, and 4.0 percent, respectively, for the same time period. What is the variance of the risk premiums on Jefferson Mills stock for these four years?
- A. .00298  
 B. .00196  
 C. .00396  
 D. .00478  
**E. .00528**

Annual risk premiums are 11.0, 18.0, 1.1, and 5.7 percent, respectively.

$$\text{Mean} = (.11 + .18 + .011 + .057)/4 = .0895$$

$$\text{Var} = [(.11 - .0895)^2 + (.18 - .0895)^2 + (.011 - .0895)^2 + (.057 - .0895)^2]/(4 - 1) = .00528$$

*Blooms: Application*  
*Jordan - Chapter 01 #75*  
*Learning Objective: 01-03 The historical risks on various important types of investments.*  
*Level of Difficulty: Intermediate*  
*Section: 1.4*  
*Topic: Risk Premium Variance*

76. Over the past four years, the common stock of JL Steel Co. produced annual returns of 7.2, 4.8, 10.2, and 12.6 percent, respectively. **During those same years, U.S. Treasury bills returned** 3.2, 3.4, 4.2, and 4.5 percent, respectively. What is the standard deviation of the risk premium on JL Steel Co. stock for this time period?
- A. 2.23 percent  
**B. 2.86 percent**  
 C. 3.29 percent  
 D. 4.46 percent  
 E. 4.61 percent

Annual risk premiums are 4.0, 1.4, 6.0, and 8.1 percent, respectively.

$$\text{Mean} = (.04 + .014 + .06 + .081)/4 = .04875$$

$$\text{Var} = [(.04 - .04875)^2 + (.014 - .04875)^2 + (.06 - .04875)^2 + (.081 - .04875)^2]/(4 - 1) = .000817$$

$$\text{Std Dev} = \sqrt{.000817} = 2.86 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #76*  
*Learning Objective: 01-03 The historical risks on various important types of investments.*  
*Level of Difficulty: Intermediate*  
*Section: 1.4*  
*Topic: Risk Premium Standard Deviation*

77. Big Town Markets common stock returned 13.8, 14.2, 9.7, 5.3, and 12.2 percent, respectively, over the past five years. What is the arithmetic average return?
- A. 10.99 percent
  - B. 11.04 percent**
  - C. 11.56 percent
  - D. 12.20 percent
  - E. 13.80 percent

$$\text{Return} = (.138 + .142 + .097 + .053 + .122)/5 = 11.04 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #77*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Arithmetic Return*

78. Over the past four years, Hi-Tech Development stock returned 36.1, 42.9, 15.4, and -33.2 percent annually. What is the arithmetic average return?
- A. 15.30 percent**
  - B. 17.67 percent
  - C. 20.53 percent
  - D. 24.20 percent
  - E. 32.25 percent

$$\text{Return} = (.361 + .429 + .154 - .332)/4 = 15.3 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #78*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Arithmetic Return*

79. You own a stock that has produced an arithmetic average return of 7.8 percent over the past five years. The annual returns for the first four years were 16, 11, -19, and 3 percent, respectively. What was the rate of return on the stock in year five?
- A. -5.00 percent
  - B. 2.75 percent
  - C. 6.25 percent
  - D. 28.00 percent**
  - E. 32.00 percent

$$\text{Total return} = .078 \times 5 = .39$$

$$\text{Year 5 return} = .39 - (.16 + .11 - .19 + .03) = 28 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #79*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Arithmetic Return*



80. An asset had annual returns of 19, -38, -17, 25, and 5 percent, respectively, over the past five years. What is the arithmetic average return?
- A.** -1.2 percent
  - B. 0.8 percent
  - C. 1.2 percent
  - D. 1.6 percent
  - E. 2.3 percent

$$\text{Average} = (.19 - .38 - .17 + .25 + .05)/5 = -1.2 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #80*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Arithmetic Return*

81. Celsius stock had year end prices of \$42, \$37, \$44, and \$46 over the past four years, respectively. What is the arithmetic average rate of return?
- A. 3.17 percent
  - B.** 3.85 percent
  - C. 4.28 percent
  - D. 10.63 percent
  - E. 11.79 percent

Annual returns are:  $(\$37 - \$42)/\$42 = -.119048$ ;  $(\$44 - \$37)/\$37 = .189189$ ;  
 $(\$46 - \$44)/\$44 = .045455$   
Average =  $(-.119048 + .189189 + .045455)/3 = 3.85 \text{ percent}$

*Blooms: Application*  
*Jordan - Chapter 01 #81*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Arithmetic Return*

82. Black Stone Mines stock returned 8, 16, -8, and 12 percent over the past four years, respectively. What is the geometric average return?
- A.** 6.59 percent
  - B. 7.36 percent
  - C. 7.75 percent
  - D. 9.94 percent
  - E. 10.33 percent

$$\text{Geometric average} = [(1 + .08)(1 + .16)(1 - .08)(1 + .12)]^{1/4} - 1 = 6.59 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #82*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Geometric Return*

83. You invested \$5,000 eight years ago. The arithmetic average return on your investment is 10.6 percent and the geometric average return is 10.23 percent. What is the value of your portfolio today?
- A. \$9,092
  - B. \$10,623
  - C. \$10,899**
  - D. \$10,947
  - E. \$11,195

$$FV = \$5,000 \times (1 + .1023)^8 = \$10,899$$

*Blooms: Application*  
*Jordan - Chapter 01 #83*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Geometric Return*

84. Jeanette invested \$12,000 four years ago. Her arithmetic average return on this investment is 8.72 percent, and her geometric average return is 8.31 percent. What is Jeanette's portfolio worth today?
- A. \$13,989
  - B. \$14,203
  - C. \$16,409
  - D. \$16,514**
  - E. \$16,766

$$FV = \$12,000 \times (1 + .0831)^4 = \$16,514$$

*Blooms: Application*  
*Jordan - Chapter 01 #84*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Geometric Return*

85. A stock produced annual returns of 5, -21, 11, 42, and 4 percent over the past five years, respectively. What is the geometric average return?
- A. 5.78 percent
  - B. 6.03 percent
  - C. 6.34 percent**
  - D. 7.21 percent
  - E. 8.20 percent

$$\text{Geometric average} = [(1 + .05)(1 - .21)(1 + .11)(1 + .42)(1 + .04)]^{1/5} - 1 = 6.34 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #85*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Geometric Return*

86. Over the past five years, an investment produced annual returns of 17, 22, -19, 3, and 15 percent, respectively. What is the geometric average return?
- A. 5.42 percent
  - B.** 6.49 percent
  - C. 8.00 percent
  - D. 15.60 percent
  - E. 16.00 percent

$$\text{Geometric average} = [(1 + .17)(1 + .22)(1 - .19)(1 + .03)(1 + .15)]^{1/5} - 1 = 6.49 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #86*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Geometric Return*

87. A portfolio had an original value of \$7,400 seven years ago. The current value of the portfolio is \$11,898. What is the average geometric return on this portfolio?
- A.** 7.02 percent
  - B. 7.47 percent
  - C. 7.59 percent
  - D. 7.67 percent
  - E. 7.88 percent

$$\$7,400 (1 + R)^7 = \$11,898; R = 7.02 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #87*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Geometric Return*

88. An initial investment of \$25,000 forty years ago is worth \$1,533,913 today. What is the geometric average return on this investment?
- A. 9.47 percent
  - B.** 10.84 percent
  - C. 11.23 percent
  - D. 11.47 percent
  - E. 12.08 percent

$$\$25,000 (1 + R)^{40} = \$1,533,913; R = 10.84 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #88*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Geometric Return*

89. A stock had year end prices of \$24, \$27, \$32, and \$26 over the past four years, respectively. What is the geometric average return?
- A. 2.02 percent
  - B. 2.18 percent
  - C. 2.55 percent
  - D. 2.70 percent**
  - E. 2.81 percent

$$(\$26/\$24)^{1/3} - 1 = 2.70 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #89*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Core*  
*Section: 1.5*  
*Topic: Geometric Return*

90. The geometric return on a stock over the past 10 years was 8.42 percent. The arithmetic return over the same period was 9.02 percent. What is the best estimate of the average return on this stock over the next 5 years?
- A. 8.75 percent**
  - B. 9.05 percent
  - C. 9.08 percent
  - D. 9.13 percent
  - E. 9.47 percent

$$\text{Projected return} = \{[(5 - 1)/(10 - 1)] \times .0842\} + \{[(10 - 5)/(10 - 1)] \times .0902\} = 8.75 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #90*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Intermediate*  
*Section: 1.5*  
*Topic: Blooms Formula*

91. The geometric return on an asset over the past 12 years has been 13.47 percent. The arithmetic return over the same period was 13.86 percent. What is the best estimate of the average return on this asset over the next 5 years?
- A. 13.47 percent
  - B. 13.67 percent
  - C. 13.72 percent**
  - D. 13.81 percent
  - E. 13.86 percent

$$\text{Projected return} = \{[(5 - 1)/(12 - 1)] \times .1347\} + \{[(12 - 5)/(12 - 1)] \times .1386\} = 13.72 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #91*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Intermediate*  
*Section: 1.5*  
*Topic: Blooms Formula*

92. A stock has an average arithmetic return of 12.55 percent and an average geometric return of 12.40 percent based on the annual returns for the last 15 years. What is projected average annual return on this stock for the next 10 years?
- A. 12.17 percent
  - B. 12.21 percent
  - C. 12.38 percent
  - D. 12.50 percent**
  - E. 12.69 percent

$$\text{Projected return} = \left\{ \frac{(10 - 1)}{(15 - 1)} \times .1255 \right\} + \left\{ \frac{(15 - 10)}{(15 - 1)} \times .1240 \right\} = 12.50 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #92*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Intermediate*  
*Section: 1.5*  
*Topic: Blooms Formula*

93. Lisa owns a stock that has an average geometric return of 11.34 percent and an average arithmetic return of 11.51 percent over the past six years. What average annual rate of return should Lisa expect to earn over the next four years?
- A. 11.38 percent
  - B. 11.41 percent**
  - C. 11.44 percent
  - D. 11.47 percent
  - E. 11.51 percent

$$\text{Projected return} = \left\{ \frac{(4 - 1)}{(6 - 1)} \times .1134 \right\} + \left\{ \frac{(6 - 4)}{(6 - 1)} \times .1151 \right\} = 11.41 \text{ percent}$$

*Blooms: Application*  
*Jordan - Chapter 01 #93*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Intermediate*  
*Section: 1.5*  
*Topic: Blooms Formula*

94. Tom decides to begin investing some portion of his annual bonus, beginning this year with \$5,000. In the first year he earns a 10% return and adds \$3,500 to his investment. In the second his portfolio loses 5% but, sticking to his plan, he adds \$500 to his portfolio. In this year his portfolio returns 2%. What is Tom's dollar-weighted average return on his investments?
- A. 0.34 percent
  - B. 1.02 percent**
  - C. 1.54 percent
  - D. 2.23 percent
  - E. 2.58 percent

Using the CashFlow worksheet in a financial calculator, the cashflows to be entered are:

$$\text{CF}_0 = -5000$$

$$\text{CF}_1 = -3500$$

$$\text{CF}_2 = -500$$

$$\text{CF}_3 = (((5000 \times 1.1) + 3500) \times .95) + 500 \times (1.02) = \$9231$$

$$\text{Solve for IRR} = 1.02\%$$

*Blooms: Application*  
*Jordan - Chapter 01 #94*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Intermediate*  
*Section: 1.5*  
*Topic: Dollar-Weighted Average Return*

95. Bill has been adding funds to his investment account each year for the past 3 years. He started with an initial investment of \$1,000. After earning a 10% return the first year, he added \$3,000 to his portfolio. In this year his investments lost 5%. Undeterred, Bill added \$2,000 the next year and earned a 2% return. Last year, discouraged by the recent results, he only added \$500 to his portfolio, but in this final year his investments earned 8%. What was Bill's dollar-weighted average return for his investments?
- A. 1.5 percent  
 B. 2.0 percent  
 C. 2.5 percent  
**D. 3.0 percent**  
 E. 3.5 percent

Using the CashFlow worksheet in a financial calculator, the cashflows to be entered are:

$$CF_0 = -1000$$

$$CF_1 = -3000$$

$$CF_2 = -2000$$

$$CF_3 = -500$$

$$CF_4 = (((((1000 * 1.1) + 3000) * .95) + 2000) * (1.02)) + 500) * 1.08 = \$7,033.93$$

$$\text{Solve for IRR} = 3.0\%$$

*Blooms: Application*  
*Jordan - Chapter 01 #95*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Intermediate*  
*Section: 1.5*

*Topic: Dollar-Weighted Average Return*

96. Jim began his investing program with a \$4000 initial investment. The table below recaps his returns each year as well as the amounts he added to his investment account. What is his dollar-weighted

TIME	INVESTMENT	RETURN
0	\$4,000	10%
1	3,000	-5%
2	500	2%
3	2,000	8%
4	1,000	-3%

average return?

- A. 0.5 percent  
 B. 0.8 percent  
 C. 1.0 percent  
 D. 1.2 percent  
**E. 1.5 percent**

Using the CashFlow worksheet in a financial calculator, the cashflows to be entered are:

$$CF_0 = -4000$$

$$CF_1 = -3000$$

$$CF_2 = -500$$

$$CF_3 = -2000$$

$$CF_4 = -1000$$

$$CF_5 = 11111.40 \text{ (see calculations below)}$$

$$\text{Solve for IRR} = 1.5\%$$

$$4000 * (1.10) = 4400$$

$$(4400 + 3000) * (.95) = 7030$$

$$(7030 + 500) * (1.02) = 7680.60$$

$$(7680.60 + 2000) * (1.08) = 10455.05$$

$$(10455.05 + 1000) * (.97) = 11111.40$$

*Blooms: Application*  
*Jordan - Chapter 01 #96*  
*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*  
*Level of Difficulty: Intermediate*  
*Section: 1.5*  
*Topic: Dollar-Weighted Average Return*

97. Jim began his investing program with a \$4000 initial investment. The table below recaps his returns each year as well as the amounts he added to his investment account. What is his dollar-weighted

TIME	INVESTMENT	RETURN
0	\$4,000	10%
1	2,800	-5%
2	900	2%
3	1,600	8%
4	2,100	-3%
5	2,400	6%

average return?

- A. 1.6 percent
- B. 2.2 percent
- C. 2.6 percent**
- D. 3.2 percent
- E. 3.6 percent

Using the CashFlow worksheet in a financial calculator, the cashflows to be entered are:

$$CF_0 = -4000$$

$$CF_1 = -2800$$

$$CF_2 = -900$$

$$CF_3 = -1600$$

$$CF_4 = -2100$$

$$CF_5 = -2400$$

$$CF_6 = 15246.78 \text{ (see calculations below)}$$

Solve for IRR = 2.6%

$$4000 * (1.10) = 4400$$

$$(4400 + 2800) * (.95) = 6840$$

$$(6840 + 900) * (1.02) = 7894.80$$

$$(7894.80 + 1600) * (1.08) = 10254.38$$

$$(10254.38 + 2100) * (.97) = 11983.75$$

$$(11983.75 + 2400) * (1.06) = 15246.78$$

*Blooms: Application*

*Jordan - Chapter 01 #97*

*Learning Objective: 01-01 How to calculate the return on an investment using different methods.*

*Level of Difficulty: Intermediate*

*Section: 1.5*

*Topic: Dollar-Weighted Average Return*

98. For the period 1926-2009, small-cap stocks outperformed large-cap stocks by a significant amount. Given this, why do investors still purchase large-cap stocks?

Answer will vary

Feedback: Students should address the risk-return relationship and explain that even though the expected long-term return on small-cap stocks exceeds the expected return on large-cap stocks, the prospect of losing money in the short-term is much greater with the small-cap stocks. Students can illustrate this relationship using the Bell curve.

*Blooms: Comprehension*

*Jordan - Chapter 01 #98*

*Learning Objective: 01-04 The relationship between risk and return.*

*Level of Difficulty: Intermediate*

*Section: 1.4*

*Topic: Risk - Return Relationship*

99. You have studied the historical returns and risks of various securities over the period of 1926-2009. Describe the historical returns and risks associated with bonds as compared to stocks over that time period.

Answer will vary

Feedback: Students should explain that stocks have a higher standard deviation, a higher risk premium, and a higher expected rate of return than bonds.

*Blooms: Comprehension  
Jordan - Chapter 01 #99  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Intermediate  
Section: 1.5  
Topic: Average Return*

100. We have studied three different "average return measures" - the arithmetic average return, the geometric average return and the dollar-weighted average return. Briefly outline what information each metric provides.

Answer will vary

Feedback: The arithmetic average return provides the return in an average year over a particular period.

The geometric return yields the average compound return per year over a period for an initially invested lump sum.

The dollar-weighted average return is a variation of the geometric average return which includes the impact of inflows and outflows.

*Blooms: Comprehension  
Jordan - Chapter 01 #100  
Learning Objective: 01-01 How to calculate the return on an investment using different methods.  
Level of Difficulty: Intermediate  
Section: 1.5  
Topic: Average Return*



# ch01 Summary

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