



6. An accumulation index differs from a price index because it assumes that dividends are reinvested back into the stock.

ANS: T

The answer is true. An accumulation index represents the true return to an investor by incorporating both the price increase and dividends paid to the investor. In contrast, the price index only captures the price increase.

PTS: 1                      DIF: Easy                      REF: 2.2.3.1.5 Accumulation indices

7. Bills of exchange and debentures are both examples of securities traded on the Australian bond markets.

ANS: F

The answer is false. Bills of exchange, being short-term debt securities, fall into the money market asset class; debentures, being longer term in nature, are classified as a bond market security.

PTS: 2                      DIF: Moderate                      REF: 2.3 Australian debt markets

8. Both LICs and LITs are closed end vehicles, though LICs distribute dividends.

ANS: F

LITs are required to distribute earnings LICs need not distribute dividends.

PTS: 1                      DIF: Easy                      REF: 2.2.1.1 The primary and secondary markets in shares

9. According to ASX short-selling rules, all short-sold positions must be settled within three days.

ANS: F

The answer is false. The additional ASX rules that apply to short selling are outlined in the appendix 2.2.

PTS: 2                      DIF: Moderate                      REF: Appendix 2.2

10. A margin call occurs when the value of the borrowed money as a proportion of the portfolio value is too high. This ratio is typically known as the value to loan ratio.

ANS: F

The answer is false. Although the first part of the question is correct, the ratio is known as loan to valuation ratio (LVR)

PTS: 2                      DIF: Moderate                      REF: 2.2.4.4 Gearing an equity investment: margin loans

## MULTIPLE CHOICE

1. In Australia, the main organized securities markets available to investors included:
- A. ASX
  - B. ASX 24
  - C. Chi-X
  - D. All of the above

ANS: D

Chi-X started trading on Oct. 2011. So by the end of 2013, ASX, ASX 24 and Chi-X are main trading systems.

PTS: 1                      DIF: Easy                      REF: 2.2.1 Australian securities exchanges

2. Which of the following bodies is responsible for the supervision of financial markets in Australia like ASX and ASX 24?
- A. RBA
  - B. ARPA
  - C. ASIC
  - D. Australian Government Treasury

ANS: C

ARPA has considerable regulatory influence over industries like the banking industry and the financial services industry it has less direct interest in regulation of the financial markets themselves. Treasury tends to take on more of an oversight role. RBA has regulatory powers in the financial markets concerned with ensuring that Financial Stability Standards are complied with.

PTS: 1                      DIF: Easy                      REF: 2. 2. 1. 2 Regulation

3. According to the ASX minimum price steps, which of the following represents the smallest possible positive simple return for a share with a current price of \$4.00?
- A. 0.01%
  - B. 0.04%
  - C. 0.25%
  - D. 1.00%

ANS: C

As outlined in appendix 2.1, the ASX minimum price steps for a share with a price between \$2 and \$998.99 is \$0.010. Hence, the smallest positive simple return will be obtained if the share price increases to \$4.01, which is a continuously compounded return of  $\ln(4.01/4.00) = 0.25\%$ .

PTS: 2                      DIF: Moderate                      REF: Appendix 2.1

4. Which of the following does not affect(s) the performance on an index?
- A. breadth
  - B. weighting system
  - C. capitalisation adjustments
  - D. dividend effects

ANS: D

The performance of an index will be affected by the number of shares in the index (i.e. breadth), whether the index is equal, value or price weighted (i.e. the weighting system) and how the index incorporates bonus issues and rights issues (i.e. capitalisation adjustments). Dividend payments are received when investing, these intra-period returns are also known as intermediate returns.

PTS: 2                      DIF: Moderate                      REF: 2.2.3 Historical equity performance

5. \_\_\_\_\_ are traded in the ASX 24 system.
- A. Australian Government bonds
  - B. Exchange-traded options
  - C. equities
  - D. Future contracts such as ASX SPI200

ANS: D

PTS: 1                    DIF: Easy                    REF: 2.2.1 Australian securities exchanges

6. The broadest index in the Australian equity market is the:
- A. S&P/ASX 200
  - B. S&P/ASX 50
  - C. ASX All-Ordinaries
  - D. Consumer Price Index

ANS: C

The ASX All-Ordinaries represents the value-weighted movements of approximately 500 shares in the Australian equity market, and hence is the broadest index of those listed. In contrast, the S&P/ASX 200 and S&P/ASX 50 are equity indices representing 200 and 50 stocks respectively and hence are said to be narrower than the All-Ordinaries index. Finally, the Consumer Price Index (CPI) is a measurement of the prices of goods and services, and hence is not an equity index.

PTS: 1                    DIF: Easy                    REF: 2.2.3.1.1 The breadth of the index

7. Which index weighting systems are most share indices using?
- A. equal-weighted index
  - B. value-weighted index
  - C. price-weighted index
  - D. All of above

ANS: B

Most share indices are value-weighted, such as the indices produced by ASX.

PTS: 1                    DIF: Easy                    REF: 2.2.3.1.2 Index weighting systems

8. Which of the following represent(s) the way in which Australian debt instruments are taxed differently from Australian equity instruments?
- A. the dividends on Australian equity instruments are not taxed
  - B. capital gains on debt instruments are not subject to CGT
  - C. capital gains on equity instruments are not subject to CGT
  - D. all of the above

ANS: B

Australian equity instruments are taxed as follows: capital gains and/or losses attract the capital gains tax (CGT) provisions, and dividends are taxed as ordinary income (note imputation has removed the double taxation of dividends that occurred under the previous classical tax system, but these payments are still subject to tax). In contrast, capital gains for debt instruments are taxed as ordinary income rather than attracting CGT.

PTS: 3                    DIF: Difficult                    REF: 2.2.4 Taxation of Australian equity instruments, 2.3.4 Taxation of Australian debt instruments

9. Which of the following is defined as a money market instrument that is termed a ‘negotiable instrument’?
- A. bill of exchange
  - B. promissory note
  - C. certificate of deposit
  - D. treasury note

ANS: A

'Bills of exchange' can be discounted, or sold, in the money market as they are negotiable instruments.

PTS: 1                    DIF: Easy                    REF: 2.3.1.2 Promissory note

10. When constructing a residential property index, it is generally not assumed that properties:
- A. have been fully renovated
  - B. have been sold within a reasonable time of their purchase
  - C. have been sold through an agent
  - D. are easily tenanted

ANS: A

While indices are available for residential properties, the interpretation of these is subject to a number of implicit assumptions regarding the properties in the index. One of the most important of these is that the property has not been improved. That is, the property should remain the same over successive sales to determine the true change in the property value. Any improvements undertaken could result in an artificially high selling price, which would overstate the return on the investment. There is no requirement that a house be sold within a certain time or that an agent is used.

PTS: 2                    DIF: Moderate                    REF: 2.4.1 Australian property market instruments

<b>ABC Limited: Order book</b>			
<b>Price (to buy)</b>	<b>Quantity (to buy)</b>	<b>Price (to sell)</b>	<b>Quantity (to sell)</b>
\$1.00	50 000	\$1.10	25 000
\$0.90	25 000	\$1.20	50 000
\$0.80	50 000	\$1.30	100 000

11. Given the order book for ABC Limited, suppose a *market order* arrives to buy 80,000 shares. At what price will the trade occur?
- A. \$0.80
  - B. \$1.00
  - C. \$1.10
  - D. \$1.30

ANS: C

A market order to buy shares will occur at the lowest available selling price in the order book. This price is \$1.10; given that there are insufficient shares available at that price (i.e. 25 000 and 80 000 shares are required to fill the order), 25 000 shares will trade at the price of \$1.10. The next 50 000 shares will be bought at \$1.20 and the last 5 000 shares at \$1.30.

PTS: 2                    DIF: Moderate                    REF: 2.2.2.2 Types of trades

12. Given the order book for ABC Limited, suppose a *limit order* arrives to buy 1000 shares at \$1.05. At what price will the trade occur? (Assume no new orders arrive after the limit order.)
- A. \$0.80
  - B. \$1.00
  - C. \$1.10
  - D. Uncertain as no trade will occur

ANS: D

A *limit order* to buy is used to purchase shares at a specific price. However, the transaction will only proceed if there are sufficient shares available at the required price. In this case, there are no traders willing to sell at a price of \$1.05 (the lowest available selling price is \$1.10), and hence the trade will not take place. Instead, the limit order will be placed on the order book as a price (to buy) of \$1.05 for a quantity (to buy) of 1000 shares. No trade will take place at this point in time.

PTS: 2                      DIF: Moderate              REF: 2.2.2.2 Types of trades

13. Given the order book for ABC limited, suppose a *market order* arrives to buy 100 000 shares. What is the cost of the 100 000 shares to the trader?
- A. \$ 120 000
  - B. \$ 90 000
  - C. \$ 80 000
  - D. \$ 130 000

ANS: A

The *market order* to buy will purchase shares at the best possible price (i.e. at the lowest price traders are willing to sell). However, there are only 25 000 shares available at the lowest sell price of \$1.10, and therefore the remaining shares will be purchased at the next lowest share price of \$1.20. Hence, the total cost of the shares will be  $25000 \times \$1.10 + 50000 \times \$1.20 + 25000 \times \$1.30 = \$120000$ .

PTS: 3                      DIF: Difficult              REF: 2.2.2.2 Types of trades

Day	BHP price (end of day)	ANZ price (end of day)
Monday	\$18.20	\$24.50
Tuesday	\$19.00	\$24.80
Wednesday	\$17.80	\$25.90
Thursday	\$16.55	\$26.00

14. Consider the end of day prices for ANZ and BHP for Monday through Thursday. Suppose an investor short sells BHP over this period, calculate their continuously compounded return to the investor.
- A. -9.97%
  - B. -9.95%
  - C. 9.50%
  - D. 9.97%

ANS: C

Short selling amounts to borrowing the share and then repaying the share at a later date. In this case, the investor will effectively borrow (and sell) the share at the Monday price of \$18.20 and then purchase the share at the Thursday price of \$16.55. Hence, the continuously compounded return to the investor is  $\ln(18.20/16.55) = 0.095$  or 9.5%.

PTS: 2                      DIF: Moderate              REF: 2.2.2.2 Types of trades

15. Consider the end of day prices for ANZ and BHP for Monday through Thursday. Suppose an investor short sells BHP and buys ANZ, what will the continuously compounded return be on the investor's combined position if the investments have equal weight?
- A. -3.56%
  - B. 3.56%
  - C. 7.72%
  - D. 15.44%

ANS: C

Short selling amounts to borrowing the share and then repaying the share at a later date. In this case, the investor will effectively borrow (and sell) the share at the Monday price of \$18.20 and then purchase the share at the Thursday price of \$16.55. Hence, the continuously compounded return to the investor for BHP is  $\ln(18.20/16.55) = 0.095$  or 9.5%. The bought position in ANZ will generate a return over the period of  $\ln(26.00/24.50) = 5.94\%$ . Therefore, the equally weighted return to the investor will be  $(0.095 + 0.0594)/2 = 0.0772$  or 7.72%.

PTS: 2                    DIF: Moderate                    REF: 2.2.2.2 Types of trades

16. Hendra Heights Ltd has 28 000 000 shares on issue. The company makes a rights issue on the basis of one share for every seven already held. The subscription price for a new share is \$4.20 per share. If all rights are taken up such that the issue is fully subscribed, and the current market value of the company's shares is \$7.50, what is the amount raised by the company through the rights issue?
- A. \$16.8m
  - B. \$30.0m
  - C. \$445.6m
  - D. \$450.0m

ANS: A

If the company has 28 000 000 shares on issue, and has a one for seven rights issue, then 4 000 000 new shares will be issued. The company will receive the subscription price for each of these shares, and hence the amount raised will be  $4000000 \times \$4.20 = \$16.8$  m.

PTS: 3                    DIF: Difficult                    REF: 2.2.3.1.3 Capitalisation changes

17. Cruiser Ltd has 3 000 000 shares on issue. The company makes a rights issue on the basis of one share for every six already held. The subscription price for a new share is \$3.20 per share. The current market value of the company's shares is \$4.00. What would be the ex-rights share price?
- A. \$2.76
  - B. \$3.17
  - C. \$3.89
  - D. \$4.06

ANS: C

Six shares are worth \$24.00 ( $6 \times \$4.00$ ). One new share costs \$3.20. Hence, ex-rights, seven shares are worth \$27.20, which makes the ex-rights share price  $\$27.20/7 = \$3.89$ .

PTS: 2                    DIF: Moderate                    REF: 2.2.3.1.3 Capitalisation changes

18. Company XYZ initially has a share price of \$1. The company makes a rights issue on the basis of 1 for every 1 held, with a subscription price of \$0.50. Calculate the ex-rights price of the XYZ shares.
- A. \$0.25
  - B. \$0.75
  - C. \$1.25
  - D. \$1.50

ANS: B

After the rights issue, the investor has two shares with a combined value of \$1.50. Hence each is worth  $\$1.50/2 = \$0.75$ .

PTS: 1                    DIF: Easy                    REF: 2.2.3.1.3 Capitalisation changes



23. An investor wants to calculate the continuously compounded return for month  $t$  for a company. If the share price of the company was \$4.50 at the start of month  $t$  and \$7.25 at the end of month  $t$ , then the month  $t$  continuously compounded return is:
- A. 30.50%
  - B. 33.65%
  - C. 40.00%
  - D. 47.69%

ANS: D

The continuously compounded return for month  $t$  is calculated as  $\ln(7.25/4.5) = 0.4769$ .

PTS: 1

DIF: Easy

REF: 2.2.3.1.4 Dividend effects

24. An investor wants to calculate the continuously compounded return for month  $t$  for a company. If the share price of the company was \$4.50 at the start of month  $t$  and \$7.25 at the end of month  $t$  and the company paid a dividend of \$0.80 in month  $t$ , then the month  $t$  return is:
- A. 16.40%
  - B. 58.16%
  - C. 26.20%
  - D. 47.70%

ANS: B

The dividend should be included in the calculation of return, as it represents a return to the investor. Hence, the continuously compounded return to the investor is  $\ln((7.25 + 0.80)/4.5) = 0.5816$  or 58.16%.

PTS: 2

DIF: Moderate

REF: 2.2.3.1.4 Dividend effects

25. Assuming an imputation tax system with a corporate tax rate of 28%, what is the *net personal tax* for an investor with a personal tax rate of 45%, if the fully franked dividend is \$14 000?
- A. -\$3000
  - B. \$0
  - C. \$3306
  - D. \$6000

ANS: C

The size of the assessable dividend is the franked dividend divided by 1 minus the corporate tax rate, or  $14000/(1 - 0.28) = 19444$ . On this amount, the investor will pay tax at the marginal rate of 45% (i.e.  $\$19444 \times 0.45 = \$8750$ ), but will receive a tax credit at the corporate tax rate of 28% (i.e.  $\$19444 \times 0.28 = \$5444$ ). The net personal tax amount is therefore  $\$8750 - \$5444 = \$3306$ .

PTS: 2

DIF: Moderate

REF: 2.2.4.3 Taxation of dividend income

26. Assuming an imputation tax system with a corporate tax rate of 30%, what is the *after tax dividend* for an investor with a personal tax rate of 47%, if the fully franked dividend is \$14 000?
- A. \$6000
  - B. \$9400
  - C. \$10 600
  - D. \$14 000

ANS: C

The size of the assessable dividend is the franked dividend divided by 1 minus the corporate tax rate, or  $14000/(1 - 0.30) = 20000$ . On this amount, the investor will pay tax at the marginal rate of 47% (i.e.  $\$20000 \times 0.47 = \$9400$ ), but will receive a tax credit at the corporate tax rate of 30% (i.e.  $\$20000 \times 0.30 = \$6000$ ). The net personal tax amount is therefore  $\$9400 - \$6000 = \$3400$ , which makes the after tax dividend  $\$14\ 000$  less  $\$3400 = \$10\ 600$ .

PTS: 2                    DIF: Moderate            REF: 2.2.4.3 Taxation of dividend income

27. Assuming an imputation tax system with a corporate tax rate of 30%, what is the *net personal tax* for an investor with a personal tax rate of 15%, if the fully franked dividend is  $\$14\ 000$ ?
- A.  $-\$3000$
  - B.  $\$0$
  - C.  $\$3400$
  - D.  $\$6000$

ANS: A

The size of the assessable dividend is the franked dividend divided by 1 minus the corporate tax rate, or  $14000/(1 - 0.30) = 20000$ . On this amount, the investor will pay tax at the marginal rate of 15% (i.e.  $\$20000 \times 0.15 = \$3000$ ) but will receive a tax credit at the corporate tax rate of 30% (i.e.  $\$20000 \times 0.30 = \$6000$ ). The net personal tax amount is therefore  $3000 - 6000 = -\$3000$ , making A the correct answer.

PTS: 2                    DIF: Moderate            REF: 2.2.4.3 Taxation of dividend income

28. Assuming an imputation tax system with a corporate tax rate of 28%, what is the *after tax dividend* for an investor with a personal tax rate of 15%, if the fully franked dividend is  $\$21\ 000$ ?
- A.  $\$11\ 985$
  - B.  $\$14\ 225$
  - C.  $\$17\ 330$
  - D.  $\$25\ 375$

ANS: D

The size of the assessable dividend is the franked dividend divided by 1 minus the corporate tax rate, or  $21\ 000/(1 - 0.28) = 29\ 167$ . On this amount, the investor will pay tax at the marginal rate of 15% (i.e.  $\$29\ 167 \times 0.15 = \$4375$ ) but will receive a tax credit at the corporate tax rate of 28% (i.e.  $\$29\ 167 \times 0.28 = \$8167$ ). The net personal tax amount is therefore  $4375 - 8167 = -\$3792$ , which makes the after tax dividend  $\$21\ 000$  plus  $\$4375$  which equals  $\$25375$ .

PTS: 2                    DIF: Moderate            REF: 2.2.4.3 Taxation of dividend income

29. Assuming an imputation tax system with a corporate tax rate of 30%, what is the *net personal tax* for an investor with a personal tax rate of 30%, if the fully franked dividend is  $\$10\ 000$ ?
- A.  $-\$3000$
  - B.  $\$0$
  - C.  $\$3400$
  - D.  $\$6000$

ANS: D

The size of the assessable dividend is the franked dividend divided by 1 minus the corporate tax rate, or  $10\,000/(1 - 0.30) = 14,286$ . On this amount, the investor will pay tax at the marginal rate of 30% (i.e.  $\$14,286 \times 0.30 = \$4,285$ ), but will receive a tax credit at the corporate tax rate of 30% (i.e.  $\$14,286 \times 0.30 = \$4,285$ ). The net personal tax amount is therefore zero, making B the correct answer.

PTS: 2                    DIF: Moderate            REF: 2.2.4.3 Taxation of dividend income

30. Assume an investor buys an apartment for investment purpose for \$400,000. The purchase is financed with 50,000 of the investor's money and the rest, \$350,000, is borrowed at a rate of 8%. Suppose the apartment earns rental income of \$10,000 and the investor earns \$100,000 p.a. and the marginal tax rate is 37%. Calculate the loss on the property.
- A. \$11,340
  - B. \$6,660
  - C. \$10,360
  - D. \$17,640

ANS: A

The interest cost on the borrowed money is  $350,000 \times 0.08 = 28,000$  exceeds the rental income about 18,000 ( $28,000 - 10,000$ ).  $18,000 \times 0.37 = 6,660$  then,  $18,000 - 6,660 = 11,340$

PTS: 1                    DIF: Moderate            REF: 2.4.2 Property taxation issues