## ANSWER KEY

1. Generally speaking, forward contracts are more liquid than futures contracts:

|             | $\operatorname{true}$ |
|-------------|-----------------------|
| $\boxtimes$ | false                 |
|             | it depends            |

2. A cocoa futures contracts which calls for delivery of 10 tons of cocoa on December 1st, is trading today at a forward price of 1,700 GBP/ton. Suppose you take a short position in one of these contracts today. What will be your gain/loss on this futures position at maturity if the spot price of cocoa is 1,750 GBP/ton on December 1st?

| 3. The risk-free yield curve is flat at $4\%$ per year. The |
|---|
| spot price of stock ABC is $\in 50$ today. What is the for- |
| ward price for a contract on stock ABC that will mature     |
| in three months?  |

4. To take positions in futures contracts on the CAC40 (the French stock market index) you need to put up an initial margin of 5%. If you believe that the French stock market will collapse soon and the market does not anticipate this imminent collapse, how would you speculate to maximize your return?

5. Today, the spot price for a 10-year zero-coupon bond (Z) is  $\in 800$ . The one-year risk-free rate is 1% per year. A forward contract on one share of Z with delivery in one year is trading today at  $\in 810$ . What is a proper arbitrage strategy?

| , | $\operatorname{Loss}$ | of | 1,000 | GBF |
|---|-----------------------|----|-------|-----|
|   |                       |    |       |     |

- $\boxtimes$  Loss of 500 GBP
- $\Box$  Loss of 100 GBP
- $\Box$  Gain of 100 GBP
- □ Gain of 500 GBP
- $\Box$  Gain of 1,000 GBP

| □ €49.00                          | ⊠ €50.49                          |
|-----------------------------------|-----------------------------------|
| $\Box \in 49.51$ $\Box \in 50.00$ | $\Box \in 51.00$ $\Box \in 51.51$ |

- $\Box$  Buy CAC40 stocks spot
- $\Box$  Short-sell CAC40 stocks spot
- $\Box~$  Buy futures on CAC40
- $\boxtimes$  Sell futures on CAC40
- $\hfill\square$  Buy Z spot, buy Z forward,
- borrow €800 for one year
- ⊠ Buy Z spot, sell Z forward, borrow €800 for one year
- □ Short-sell Z spot, buy Z forward, lend €800 for one year
- □ Short-sell Z spot, sell Z forward, lend €800 for one year