

50. Under what circumstances will the holder of the following options make a profit? Under what circumstances will the options be exercised? Draw a diagram illustrating how the profit from the options depends on the stock price at maturity of the options.
- Long position in a European call that costs \$5 and has strike price \$100.
 - Short position in a European put that costs \$8 and has strike price \$60.
 - Long positions in a European call and put that cost \$3 and \$4 and have strike prices \$45 and \$40.
51. The price of a stock is \$40. The price of a 1-year European put on the stock with a strike price of \$30 is quoted as \$7 and the price of a 1-year European call on the stock with a strike price of \$50 is quoted as \$5. Explain and draw diagrams:
- An investor buys 100 shares, shorts 100 call options, and buys 100 put options.
 - An investor buys 100 shares, shorts 200 call options, and buys 200 put options.
52. Consider an exchange-traded call option contract to buy 500 shares with a strike price of \$40 and maturity in 4 months. Explain how the terms of the option contract change when there is: (a) a 4-for-1 stock split; (b) a 10% stock dividend.