**4-6A.** (*Cash budget*) The Sharpe Corporation’s projected sales for the first eight months of 2004

are as follows:

January $ 90,000 May $300,000

February 120,000 June 270,000

March 135,000 July 225,000

April 240,000 August 150,000

Of Sharpe’s sales, 10 percent is for cash, another 60 percent is collected in the month following

sale, and 30 percent is collected in the second month following sale. November and December

sales for 2003 were $220,000 and $175,000, respectively.

Sharpe purchases its raw materials two months in advance of its sales equal to 60 percent of their

final sales price. The supplier is paid one month after it makes delivery. For example, purchases

for April sales are made in February and payment is made in March.

In addition, Sharpe pays $10,000 per month for rent and $20,000 each month for other expenditures.

Tax prepayments of $22,500 are made each quarter, beginning in March.

The company’s cash balance at December 31, 2003, was $22,000; a minimum balance of $15,000

must be maintained at all times. Assume that any short-term financing needed to maintain the cash

balance is paid off in the month following the month of financing if sufficient funds are available.

Interest on short-term loans (12 percent) is paid monthly. Borrowing to meet estimated monthly

cash needs takes place at the beginning of the month. Thus, if in the month of April the firm expects

to have a need for an additional $60,500, these funds would be borrowed at the beginning of April

with interest of $605 (.12 1/12 $60,500) owed for April and paid at the beginning of May.

**a.** Prepare a cash budget for Sharpe covering the first seven months of 2004.

**b.** Sharpe has $200,000 in notes payable due in July that must be repaid or renegotiated for

an extension. Will the firm have ample cash to repay the notes?

**5-1A.** (*Compound interest*) To what amount will the following investments accumulate?

**a.** $5,000 invested for 10 years at 10 percent compounded annually

**b.** $8,000 invested for 7 years at 8 percent compounded annually

**c.** $775 invested for 12 years at 12 percent compounded annually

**d.** $21,000 invested for 5 years at 5 percent compounded annually

**5-4A.** (*Present value*) What is the present value of the following future amounts?

**a.** $800 to be received 10 years from now discounted back to the present at 10 percent

**b.** $300 to be received 5 years from now discounted back to the present at 5 percent

**c.** $1,000 to be received 8 years from now discounted back to the present at 3 percent

**d.** $1,000 to be received 8 years from now discounted back to the present at 20 percent

**5-5A.** (*Compound annuity*) What is the accumulated sum of each of the following streams of

payments?

**a.** $500 a year for 10 years compounded annually at 5 percent

**b.** $100 a year for 5 years compounded annually at 10 percent

**c.** $35 a year for 7 years compounded annually at 7 percent

**d.** $25 a year for 3 years compounded annually at 2 percent

**5-6A.** (*Present value of an annuity*) What is the present value of the following annuities?

**a.** $2,500 a year for 10 years discounted back to the present at 7 percent

**b.** $70 a year for 3 years discounted back to the present at 3 percent

**c.** $280 a year for 7 years discounted back to the present at 6 percent

**d.** $500 a year for 10 years discounted back to the present at 10 percent