

**TABLE 3-5**  
**FUNCTIONS INTRODUCED IN THIS CHAPTER (CONTINUED)**

Purpose	Function	Page
Determines the minimum of a list of arguments	<b>MIN</b> ( <i>NUMBER1</i> , <i>NUMBER2</i> , ...)	81
Determines the maximum of a list of arguments	<b>MAX</b> ( <i>NUMBER1</i> , <i>NUMBER2</i> , ...)	83
Returns true only if all arguments are true	<b>AND</b> ( <i>LOGICAL1</i> , <i>LOGICAL2</i> , ...)	94

### Problems

1. Lakewood Laser SkinCare's ending cash balance as of January 31, 2012 (the end of its fiscal year 2011) was \$10,000. Its expected cash collections and payments for the next six months are given in the following table.

Month	Collections	Payments
February	\$16,500	\$19,400
March	18,300	20,800
April	22,700	21,600
May	29,100	24,300
June	32,500	26,700
July	36,000	27,200

- a. Calculate the firm's expected ending cash balance for each month.
- b. Assuming that the firm must maintain an ending cash balance of at least \$9,000, how much must they borrow during each month?
- c. If the firm must pay 5% annual interest on its short-term borrowing, how does this affect your ending cash balance calculations?
- d. Finally, how would your ending cash balance change if the firm uses any cash in excess of the minimum to pay off its short-term borrowing in each month?

2. Loblaw Manufacturing has asked you to create a cash budget in order to determine its borrowing needs for the June to October period. You have gathered the following information.

Month	Sales	Other Payments
June 2012	\$172,000	\$80,000
July	142,000	75,000
August	121,000	70,000
September	93,000	50,000
October	76,000	45,000
November	81,000	

April and May sales were \$115,000 and \$135,000, respectively. The firm collects 35% of its sales during the month, 55% the following month, and 10% two months after the sale. Each month it purchases inventory equal to 60% of the next month's expected sales. The company pays for 40% of its inventory purchases in the same month and 60% in the following month. However, the firm's suppliers give it a 2% discount if it pays during the same month as the purchase. A minimum cash balance of \$25,000 must be maintained each month, and the firm pays 6% annually for short-term borrowing from its bank.

- Create a cash budget for June to October 2012. The cash budget should account for short-term borrowing and payback of outstanding loans as well as the interest expense. The firm ended May with a \$30,000 unadjusted cash balance.
- Bob Loblaw, the president, is considering stretching out its inventory payments. He believes that it may be less expensive to borrow from suppliers than from the bank. He has asked you to use the Scenario Manager to see what the total interest cost for this time period would be if the company paid for 0%, 10%, 30%, or 40% of its inventory purchases in the same month. The balance would be paid in the following month. Create a scenario summary and describe whether the results support Bob's beliefs.

3. Camp and Fevurly Financial Planners have forecasted revenues for the first six months of 2012, as shown in the following table.

Month	Revenue	Month	Revenue
November 2011	\$48,000	March	30,000
December	45,000	April	38,000
January 2012	25,000	May	40,000
February	27,000	June	45,000

The firm collects 60% of its sales immediately, 39% one month after the sale, and 1% are written off as bad debts two months after the sale. The firm assumes that wages and benefits paid to clerical personnel will be \$7,000 per month while commissions to sales associates average 25% of collectable sales. Each of the two partners is paid \$5,000 per month or 20% of net sales, whichever is greater. Commissions and partner salaries are paid one month after the revenue is earned. Rent expense for their office space is \$3,500 per month, and lease expense for office equipment is \$800. Utilities average \$250 per month, except in May and June when they average only \$150. The ending cash balance in December 2011 was \$12,000.

- Create a cash budget for January to June 2012, and determine the firm's ending cash balance in each month assuming that the partners wish to maintain a minimum cash balance of \$10,000.
- Camp and Fevurly are thinking of obtaining a line of credit from their bank. Based on their expectations for the first six months of the year, what is the minimum amount that would be necessary? Round your answer to the next highest \$1,000 and ignore interest charges on short-term debt. (Hint: Look up the **ROUNDUP** function in the online help.)
- Create three scenarios (best case, base case, and worst case) assuming that revenues are 10% better than expected, exactly as expected, or 10% worse than expected. What is the maximum that the firm would need to borrow to maintain its minimum cash balance in all three cases? Use the Scenario Manager and create a summary of your results. Would this change your answer in part b?

4. You were recently hired to improve the financial condition of Idaho Springs Hardware, a small chain of three hardware stores in Colorado. On your first day the owner, Chuck Vitaska, told you that the biggest problem facing the firm has been periodic unexpected cash shortages that have made it necessary for him to delay wage payments to his employees. Having recently received a degree in finance, you immediately realize that your first priority is to develop a cash budget and to arrange for a short-term borrowing agreement with the firm's bank. After looking at the firm's past financial records, you developed a sales forecast for the remainder of the year, as is presented in the following table.

Month	Sales	Month	Sales
June 2012	\$62,000	October	59,000
July	73,000	November	47,000
August	76,000	December	41,000
September	70,000		

In addition to the seasonality of sales, you have observed several other patterns. Individuals account for 40% of the firm's sales, and they pay in cash. The other 60% of sales are to contractors with credit accounts, and they have up to 60 days to pay. As a result, about 20% of sales to contractors are paid one month after the sale, and the other 80% is paid two months after the sale. Each month the firm purchases inventory equal to about 45% of the following month's sales. About 30% of this inventory is paid for in the month of delivery, while the remaining 70% is paid one month later.

Each month the company pays its hourly employees a total of \$9,000, including benefits. Its salaried employees are paid \$12,000, also including benefits. In the past, the company had to borrow to build its stores and for the initial inventories. This debt has resulted in monthly interest payments of \$4,000 and monthly principal payments of \$221. On average, maintenance at the stores is expected to cost about \$700 per month, except October to December when snow removal costs will add about \$200 per month. Sales taxes are 7% of quarterly sales and must be paid in June, September, and December. Other taxes are also paid during those months and are expected to be about 4% of quarterly sales in each of those months. The owner wishes to maintain a cash balance of at least \$12,000 to limit the risk of cash shortages. The cash balance at the end of May is expected to be \$15,000 (before any borrowing or investing).

- a. Create a simple cash budget for Idaho Springs Hardware for June to December. Note that your records indicate that sales in April and May were \$51,000 and \$57,000, respectively. January 2013 sales are expected to be \$36,000. What would be the ending cash balances if the firm does not borrow to maintain its \$12,000 minimum?
- b. Now assume that the firm can borrow from the bank at a rate of 9% per annum to maintain its liquidity and meet its required minimum cash balance. In addition, if the firm has funds in excess of the minimum, it will use the excess to pay off any previous balance.
- c. While negotiating a line of credit, the firm's bank offered to sweep any cash in excess of the minimum into a money market fund that will return an average of 4% per year after expenses. If you accept this offer, how will it affect the firm's ending cash balances and need to borrow in each month? Note that the firm must have paid off all short-term loans before any excess cash can be invested, and invested funds will be used instead of borrowing when needed.
- d. After completing the cash budget, you begin to think of ways to further reduce the firm's borrowing needs. One idea that comes to mind is changing the firm's credit policy with contractors because they seem to always pay at the last minute. Three scenarios come to mind: (1) In the best case, contractors are required to pay for 100% of their purchases during the month after the sale. You believe that this would cause a 5% decline in sales. (2) In the base case, everything remains as already outlined. (3) In the worst case, contractors would be required to pay for 100% of their purchases during the month after the sale, and you believe that this would cause a 20% drop in sales. You decide to use the Scenario Manager to evaluate these scenarios. To summarize the impact of the change, you will examine the impact on the firm's maximum borrowing needs and cumulative net interest cost (after accounting for investment earnings). In your opinion, should the firm change its credit policy?