Tippin' Cows and Other Important Stuff!

Concepts

- Using a spreadsheet to develop an income statement

Overview

This activity will teach students how to develop basic profit/loss statements (sometimes called an income statement). It will help students better understand the relationship between income, expense, and cash on hand using the spreadsheet functionality of the *CellSheet*™ APP.

Materials

- TI-84 Plus
- *Cellsheet*™ APP

Introduction

Gary Briers owns a small farm in Anderson, Texas. He ranches and farms part-time on 280 acres. Gary owns 100 cows and 3 bulls. He plants 40 acres in sorghum and seeds 16 acres in alfalfa hay.

He tends to sell feeder calves when they reach 500 pounds; today's market is about $1.05/lb for beef.

His typical yield of hay is 65 bales per acre, and today's market for hay is $4.75/bale.

His average sorghum yield is 60 bushels/acre. Today's market rate is $2.30/bushel.

His depreciation on buildings is $3100 and on machinery and equipment is $8,500. Damage to a storage facility during a storm resulted in a loss of $3,600 in crop inventory. During the current year, he had $38,600 in total operating expenses.

Gary's looking at purchasing a new pickup truck that costs about $29,300.

Complete the following activity to determine if Gary will be able to pay cash or if he should seek financing.

- If this year he had 100 feeder calves, estimate the value of the feeder calves he has for sale

    _____.

- Estimate the sales from alfalfa if he has two cuts/yr.

    _____.

- Calculate sorghum sales _____.

Before making this major purchase, Gary decides he needs to make a profit/loss statement to decide if he can afford the truck.

You will use the *Cellsheet™* APP to explore the profit/loss of Gary Briers' ranch and farm operation.

Starting the *Cellsheet™* Application

1. Press APPS to display the list of applications on your calculator.
2. From the APPLICATIONS list, select *Celsheet*.
3. Press any key to bypass the Introduction screen.
   - The Help screen is next. Note the keystroke information for entering cell information and navigating within the spreadsheet (Figure 1).
4. Press any key to display a new spreadsheet or the last spreadsheet that was opened.

Figure 1

Creating a New Spreadsheet

1. Find the Menu icon at the bottom right of the screen and press the GRAPH button to select Menu (Figure 2).
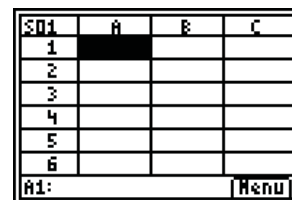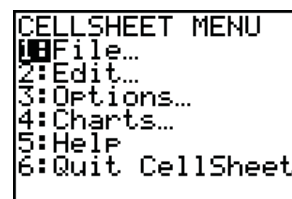2. Select **1:File** by pressing ENTER or 1 (Figure 3).

Figure 2

Figure 3

3. Select **3:New** by pressing 3 (Figure 4).

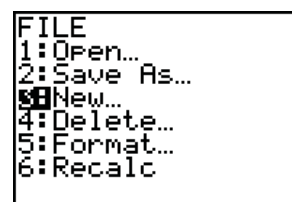**Figure 4**

4. Name the new spreadsheet EXPENSES, and press ENTER twice (Figure 5).

5. To enter text, move the cursor to cell A1.
   - Press 2nd ALPHA " and type column heading **CFI** to represent Cash Farm Income.
   - Press ENTER.
   - Continue with cells B1 through G1 for the remaining labels:
     o **IC** for Inventory Change
     o **TR** for Total Revenue
     o **TCE** for Total Cash Expenses
     o **D** for Depreciation
     o **TE** for Total Expenses
     o **NFI** for Net Farm Income (Figure 6)

6. In column A, enter all farm income values.
   - Remember to press ENTER after each entry (Figure 7).

7. Determine the sum of the entries in column A by pressing STO► to start the formula with =.
   - Press 2nd STAT and select MATH 5:sum(.
   - Press ALPHA A 2 ALPHA: ALPHA 4) ENTER (Figure 8).

8. Continue with the entries in columns B, D, E.

9. Move the cursor to cell C2 and enter the formula shown at the right to calculate Total Revenue (Figure 9).

10. Using the functionality of the *Cellsheet* APP, move to cell F2, and enter a formula to calculate the Total Expenses.

11. Now calculate the Net Farm Income for Gary's operation by moving to cell G2.
    - Discuss the purchase of the new pickup truck.

Discussion Questions

1. Does Gary have enough to make the purchase of the new pickup truck?

NEW...
Old:SO1
New:EXPENSES
Enter

Figure 5

EXPE	A	B	C
1	CFI	IC	TR
2			
3			
4			
5			
6			
A2:			[Menu]

Figure 6

EXPE	A	B	C
1	CFI	IC	TR
2	52500		
3	5520		
4	9880		
5			
6			
A5:			[Menu]

Figure 7

EXPE	A	B	C
1	CFI	IC	TR
2	52500		
3	5520		
4	9880		
5			
6			
A5: =sum(A2:A4)			

Figure 8

EXPE	A	B	C
1	CFI	IC	TR
2	52500	-3600	
3	5520		
4	9880		
5	67900		
6			
C2: =(A5+B2)			

Figure 9

Profit-Loss Statement

Looking at the original problem, estimate the amount of cash on hand that Gary Briers would have at the end of the year.

Compare and discuss this amount with the profit for the year. How do you reconcile the difference between these two numbers?

PROFIT-LOSS STATEMENT		
Cash Farm Income	$	
Inventory Change	$	
Total Revenue		$
Total Cash Expenses	$	
Depreciation	$	
Total Expenses		$
Net Farm Income		$