

REVIEW EXERCISE ANSWER KEY

I. TRUE-FALSE. Circle the best answer.

- F 1. A cash flow projection shows the expected profitability of a farming operation for the coming year.

By definition, profitability is an accrual-based concept, consequently expected profitability could only be shown with an accrual-based income statement. A cash flow projection could reflect more (less) than one year's production, more (less) than one year's expenses, and capital asset purchases and sales.

- F 2. When a farmer repays a loan, net worth is increased.

Repayment of a loan results in a decrease in cash or other assets as well as a decrease in liabilities in the same amount. Therefore, net worth is unchanged.

- F 3. An increase in prepaid expenses generates a positive accrual adjustment to cash operating expenses (causing expenses to increase).

When assets increase from one balance sheet to another, such as prepaid expenses, expenses decrease. Thus, a negative accrual adjustment to cash operating expenses results.

- F 4. A reconciliation of net worth can be used to reconcile the income statement and the historical cash flow statement.

- F 5. Owner equity on a cost basis is always less than owner equity on a market value basis.

This statement is false. For example, it is possible for the market value of real estate to be less than the original cost.

- F 6. When market value net worth is increasing over time, that means net income of the business has been positive.

The increase in market value net worth could be caused entirely by increases in the values of capital assets. Although it is common that income could be positive during a period where market value net worth is increasing, you cannot determine if that is the case based on the market value net worth change.

- F 7. Accrual net farm income is always less than or equal to net cash farm income.

Accrual net farm income can be more, less, or the same as net cash farm income.

- F 8. With the exception of depreciation, Schedule F always provides a reliable estimate of net cash income.

We discussed six items on the Schedule F that can be misleading as to net cash income. They include purchases of feeder livestock, CCC loans or PIK and Roll activity, crop insurance proceeds, installment sales contracts, patronage dividends, whether a borrower is classified as a hedger for tax purposes with gains and losses disclosed, and depreciation

- F 9. Principal payments on operating loans are an expense item that should be included in calculating net farm income.
Principal payments merely represent a return on funds borrowed from a creditor -- they are not an operating expense. However, the interest expenses associated with the borrowed funds is an expense item.
- T 10. Unrealized capital gains on land are not included in measuring net farm income.
Because these gains are not expected to be realized during the next operating cycle, they are not included in the calculation of net farm income.
- F 11. If capital replacement and term debt repayment capacity (CRTDR Capacity—before subtracting out uses of capacity) is negative, that means there is insufficient cash to pay all loan obligations.
Capital replacement and term debt repayment analysis is based on accrual earnings, not cash. Therefore, these calculations provide information only about the capacity of the operation to meet loan obligations, not whether cash actually exists to meet those obligations
- T 12. If CRTDR Margin after Replacement is consistently positive, you would expect working capital to be increasing (ignoring other capital purchases).
A business in this position is building working capital on a regular basis, beyond the total demands on capital replacement and term debt repayment capacity. Therefore, you would expect this excess capacity to increase working capital
- F 13. If net earnings (after withdrawals) is positive, then capital replacement and term debt repayment capacity must also be positive.
There are only three numbers that comprise capital replacement and term debt repayment capacity -- net earnings, depreciation, and interest on capital debt. If net earnings is positive, then capacity must also be positive.
- T 14. Cash flow statements can be used to determine if there is adequate cash to meet capital debt obligations but they cannot be used to determine if there is adequate capacity to meet capital debt obligations.
An operator could be liquidating inventories or deferring payments of bills to generate cash. While this practice can be done in the short term to meet debt payments, it cannot continue indefinitely. In this case the operator is generating sufficient cash but not sufficient capacity.
- T 15. Interest expense/value of farm production is a financial efficiency measure.
This ratio measures the proportion of value of farm production used to pay interest expense.
- F 16. Net farm income is a measure of solvency.
Net farm income is a measure of profitability. Solvency refers to the firm's ability to meet its obligations with the assets currently owned.

- T 17. If the ratio of interest expenses to value of farm production is 50 percent, it is highly likely the operation will have a negative net income.
Studies have shown that net income tends to go negative as the ratio of interest expense to value of farm production approaches 25%. An operation with a ratio of 50% would almost surely have a negative net income
- T 18. The higher the debt-to-asset ratio the higher is the debt-to-equity ratio.
Because the numerators in both of these ratios are the same number, and the denominators are positively related, these ratios will change in the same direction
- F 19. If the interest rate on borrowed money is higher than the percent return on assets, then the percent return on equity capital is always negative.
Because ROA is comprised of ROE and the cost of debt, when the cost of debt is higher than the ROA, then all we know is that the ROE must be lower than ROA—but not necessarily negative.
- F 20. A current asset-to-current liability ratio of 2:1 is usually considered a sign of serious liquidity problems.
Most lender consider a current ratio of 2:1 to be a sign of "good" liquidity.
- F 21. A leverage ratio (D/E) is a good measure of the liquidity position of a farm firm.
The leverage ratio is a measure of solvency, not liquidity.
- F 22. Balance sheets of borrowers with investments in other entities should always be consolidated no matter how small the involvement of the borrower in one of those entities.
Consolidated balance sheet are normally prepared only when more than 50% of the entity is owned by the borrower.
- F 23. Consolidation requires that balance sheets for various entities be constructed for the same date.
*In order to obtain a **meaningful** consolidated balance sheet, the balance sheets for the various entities must be of the same date.*
- F 24. If a borrower has principal payments related to depreciable assets that are greater than estimate of gross capital replacement, you should indicate a negative number as the true net replacement analysis when you calculate CRTDR Margin after Replacement.
Net capital asset replacement should never be less than zero.
- T 25. Gain or loss on sale of capital assets must be included in the calculation of net earnings or you will be unable to reconcile owner equity.
The gain or loss from the income tax return is only useful if you are using the tax basis of capital assets on the balance sheet.

II. PROBLEMS

1. Jack Smith buys \$70,000 of machinery on July 1, 20X1. The purchase requires \$20,000 down and \$10,000 of principal payments on July 1 of each of the next 5 years. Interest is 10% on the remaining balance and is paid annually along with principal payments.

\$2,500 a. What is the amount of accrued interest on this loan as of 12/31/X1?
(7/1/X1 to 12/31/X1 is 1/2 year)

$$(\$70,000 - \$20,000) * 10\% * \frac{1}{2} \text{ year} = \$2,500$$

\$12,500 b. What is the amount of current liabilities for this loan as of 12/31/X1?

<i>Accrued interest</i>	<u>\$ 2,500</u>
<i>Current portion term debt</i>	<u>10,000</u>
<i>Total current liabilities</i>	<u>12,500</u>

\$40,000 c. What is the amount of noncurrent liabilities for this loan as of 12/31/X1?

\$10,000 of principal should be listed as a current liability; the remaining \$40,000 would be shown as a noncurrent liability.

\$5,000 d. Assuming no default or rescheduling, what is the amount of interest paid in cash on this loan in 20X2?

$$(\$70,000 - \$20,000) * 10\% = \$5,000 \text{ (remember: cash paid only)}$$

\$4,500 e. What is the total amount of interest expenses (cash interest and the adjustment for changes in accrued interest) that would be reported on the 20X2 accrual income statement?

<i>Accrued interest at 12/31/X1</i>	<u>\$ 2,500</u>	
<i>Accrued interest at 12/31/X2</i>	<u>2,000</u>	<i>[(\\$50,000 - 10,000) * 10% * 1/2 year]</i>
<i>Decline in accrued interest</i>	<u>500</u>	

<i>Cash interest paid in 20X2</i>	<u>\$ 5,000</u>
<i>less Decline in accrued interest</i>	<u>500</u>
<i>Accrual interest expense</i>	<u>4,500</u>

2. Suppose you observe the following patterns of cash flows and repayment capacity (accrual) for a given farm operation.

	<u>20X1</u>	<u>20X2</u>	<u>20X3</u>	<u>20X4</u>
Cash available after debt amortization	42,000	30,000	33,000	7,500
CRTDR Capacity	60,000	31,000	38,000	39,000
Total debt service	35,000	36,000	39,000	40,000
Net capital replacement	<u>15,000</u>	<u>14,000</u>	<u>16,000</u>	<u>20,000</u>
CRTDR Margin after Replacement	10,000	(19,000)	(17,000)	(21,000)

T a. This data indicates the farming operation has generated sufficient cash to meet capital debt obligations.

Cash available after debt amortization is positive in all four years.

F b. This operation is in a good position to handle additional capital debt.

Total debt service exceeds CRTDR capacity for each of the last three years. It is unlikely that the operation has sufficient capacity to handle additional debt.

T c. This operation is likely generating cash by depleting inventory or by allowing accounts payable to increase.

To obtain comparable numbers you need to add debt service back to cash available after debt amortization. The cash number is higher than the accrual-based CRTDR capacity by a total of \$94,500 over the four year period. Therefore, it is likely that inventories are being depleted or accrued expenses allowed to increase.

3. Given the following information for Fred Farmer:

Fred Farmer			
December 31, 20X1			
Assets		Liabilities	
Current assets	\$150,000	Current liabilities	\$200,000
Non-current assets	\$550,000	Non-current liabilities	\$200,000
Net Farm Income (after family living) for 20X1			\$25,000
Interest Expenses for 20X1			\$40,000

\$300,000 a. What is the amount of owner equity?

Total assets – Total liabilities = Owner equity
\$700,000 – 400,000 = 300,000

.75 b. What is the current ratio?

Current assets ÷ Current liabilities = Current ratio
\$150,000 ÷ 200,000 = .75

F c. The current ratio would be considered favorable by most lenders.

A favorable current ratio would most likely be at least 1.5.

0.57 d. What is the debt-to-asset ratio?

Total liabilities ÷ Total assets = Debt-to-asset ratio
\$400,000 ÷ 700,000 = 0.57

1.33 e. What is the debt-to-equity ratio?

Total liabilities ÷ Total equity = Debt-to-equity ratio
\$400,000 ÷ 300,000 = 1.33

9.3% f. What is the percent return on assets (ROA)?

$$\frac{(\text{Net farm income} + \text{Interest} - \text{Withdrawals})}{\text{Average farm assets}} \\ (\$25,000 + 40,000) \div 700,000 = 9.3\%$$

8.3% g. What is the percent return on equity (ROE)?

$$\frac{(\text{Net farm income} - \text{Withdrawals})}{\text{Average farm equity}} \\ \$25,000 \div 300,000 = 8.3\%$$

4. Given the following partial balance sheet information and that net cash income after depreciation and withdrawals was \$35,000 for the period, calculate accrual net earnings.
\$23,300

	<u>Beginning</u>	<u>Ending</u>	<u>Accrual Adj.</u>
Assets			
Cash	6,000	12,000	-
Accounts Receivable	20,000	12,000	(8,000)
Inventories	60,000	65,000	5,000
Prepaid Expenses	12,000	8,000	(4,000)
Liabilities			
Accounts Payable	5,000	2,500	2,500
Operating Loans	36,000	29,000	-
Accrued Interest	13,500	20,700	(7,200)
			(11,700)

$$\text{Net cash income} \pm \text{accrual adjustments} = \text{accrual net earnings} \\ \$35,000 - 11,700 = 23,300$$

5. Given the following information for Frank and Frieda Farmer:

**Frank and Frieda Farmer
Market Value Balance Sheets**

	<u>1/15/X1</u>	<u>2/4/X2</u>
Current Assets	265,000	400,000
Machinery	440,000	450,000
Real Estate	1,200,000	950,000
Other Non-Current	<u>50,000</u>	<u>50,000</u>
Total Assets	1,955,000	1,850,000
Liabilities	885,000	935,000
Net Worth	<u>1,070,000</u>	<u>915,000</u>
Total Liab and NW	1,955,000	1,850,000
Net Worth Change	(155,000)	

No land was purchased, contributed or this period.

Machinery Sales: \$40,000

Machinery Purchases: \$65,000 and \$30,000

Note: The machinery depreciation implicit in the balance sheets can be used as a proxy for actual depreciation.

No a. Is the negative \$155,000 change in net worth shown over the period an accurate representation of the change in retained earnings? (yes or no)

This change includes substantial declines in real estate values.

\$45,000 b. How much machinery depreciation is reflected on these financial statements for the entire period?

Beginning balance – sales + purchases – ending balance = Depreciation expense
\$440,000 – 40,000 + 95,000 – 450,000 = 45,000

\$125,000 c. Assuming the farmer withdrew \$30,000 for family living, what is the cumulative net income for the period?

<i>Change in market value net worth</i>	<i>(155,000)</i>
<i>Contributions</i>	<i>0</i>
<i>Revaluation of machinery</i>	<i>0</i>
<i>Revaluation of land</i>	<i><u>250,000</u></i>
<i>Earned net worth change</i>	<i>95,000</i>
<i>Family living withdrawals</i>	<i><u>30,000</u></i>
<i>Cumulative net income</i>	<i><u>125,000</u></i>

6. Given the following information, calculate withdrawals.

Net Income	30,000	<i>30,000</i>
Ending Net Worth	300,000	<i>(300,000)</i>
Beginning Net Worth	280,000	<i>280,000</i>
Gifts and Inheritances	10,000	<i>10,000</i>
Asset Appreciation	25,000	<i><u>25,000</u></i>
Withdrawals =	<u>\$45,000</u>	

7. Briefly describe three approaches to getting better financial information from your borrowers.

a. _____

b. _____

c. _____

III. MULTIPLE CHOICE

1. Classification of a lease obligation as a capital lease (for financial statement purposes) is based on meeting one of four basic criteria. Which one of the following is not one of the qualifying criteria.

d. Sum of the lease payments exceeds the purchase price of the asset.

If the net present value of the lease payments exceeds 90% of the purchase price of the asset, the transaction is a capital lease.

2. When people refer to ag balance sheets prepared on a "cost" basis versus a "market" basis, they are usually only referring to the method used for:

a. Valuing breeding livestock, machinery, real estate and buildings and improvements.

While LIFO and FIFO are cost-based inventory methods, ag balance sheets rarely, if ever use that approach. Generally, when people refer to "cost" balance sheets in ag they are referring to the valuation method for capital assets.

3. If an operation shows liquidity increases over a period of 2-3 years, which of the following could be the cause?

e. a, b, and c.

If depreciation expenses are greater than the sum of the net loss, withdrawals, and term debt, working capital will, if fact, increase. Answers a. and c. should be obvious.

4. Which of the following could cause an "unreconciled difference" between calculated net income and change in earned net worth?

e. a, b, and c.

5. You have completed an accrual analysis for a borrower and determined that net income for the year was \$50,000. Next, you reconcile family living as follows:

Beginning Net Worth (cost)	420,000
+ Net Income	50,000
- Ending Net Worth	<u>480,000</u>
= Family Living	(10,000)

Which of the following would be appropriate next steps?

f. Both c and d.

It is likely that an error has been made that overstates the change in net worth during the year. Either the beginning net worth is too low, net income is too low, or ending net worth is too high (or some combination of all three). Both answers c. and d. address this problem. Answer b. if true, would make the net worth change even larger, and family living even more negative.

6. Assume that you have a 20X0 tax return that shows net income of \$8,000 (using your number for depreciation). You also have calculated an earned net worth change of \$43,000 based on balance sheets dated 2/15/X0 and 3/7/X1. Which of following are appropriate actions?

d. Do your best to verify the balance sheets for completeness and accuracy. Based on you level of comfort with the verification, rely on the number your feel is most accurate.

"D" is the only reasonable answer. Accrual adjustments should be made only if the balance sheets exactly bracket the cash earnings period. Also, unless that same relationship exists, it is very difficult to reconcile the difference between cash earnings and earned net worth change

7. A new applicant's balance sheet shows an investment in Acme Ltd. of \$12,000. As you ask questions about this investment, you learn that this represents a 1/3 interest a venture formed to build a mini-storage facility. When completed, the entity will have total assets of approximately \$150,000 and a long-term mortgage of \$124,000. What is the minimum analysis that you should do?

c. Review a projection, assess whether future contributions are planned or likely, and discuss plans for future expansion of the storage facility. Disclose your assessment of these issues, as well as the total amount of partnerships liability in your written analysis of the credit.

A percentage consolidation or a full consolidation of less than a 50% interest can provide very misleading results, and should be used with extreme caution. This question asks what the minimum analysis should be, and that is alternative "c".