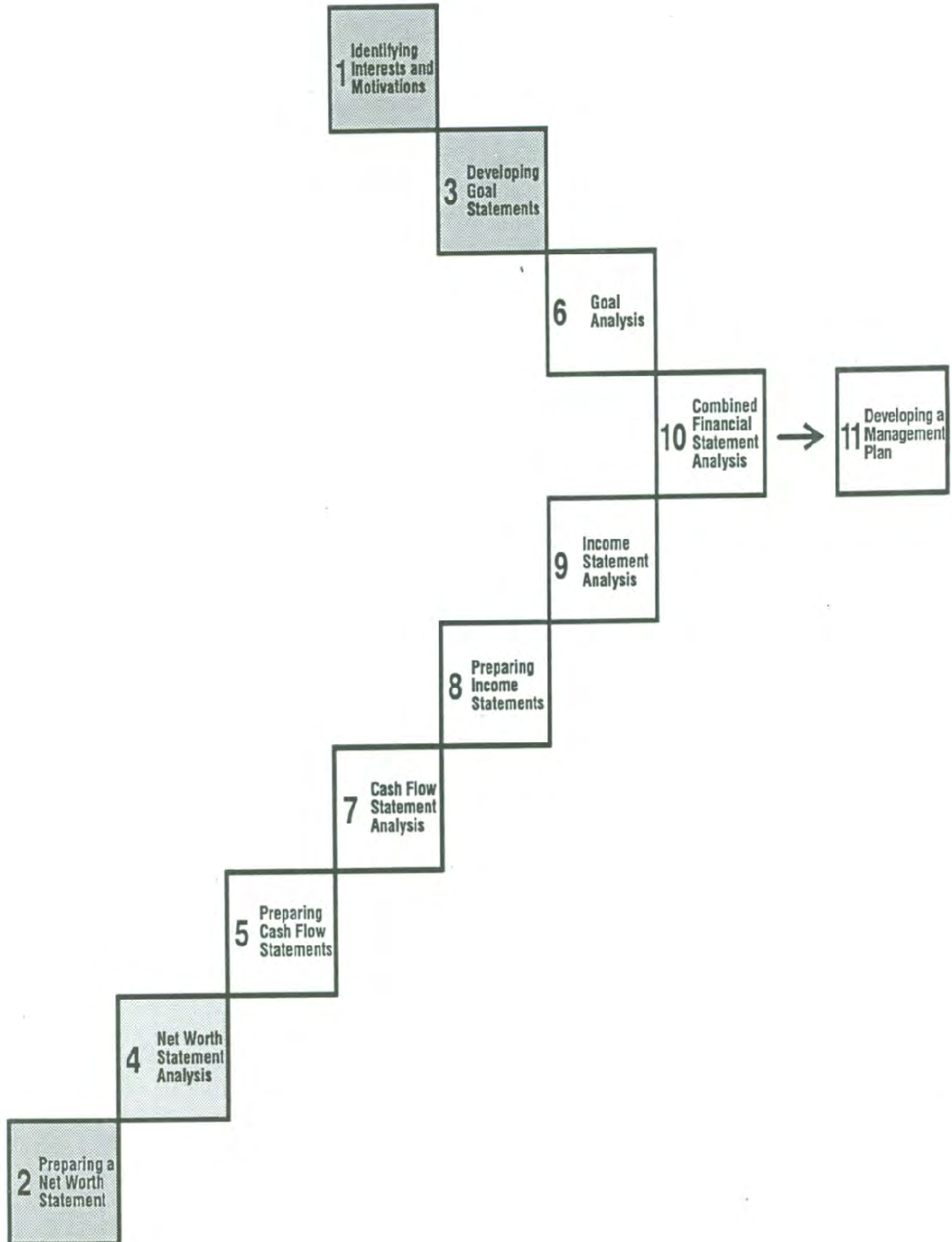




COMPREHENSIVE GUIDE TO FARM FINANCIAL MANAGEMENT

Module 4: Net Worth Statement Analysis

Course Map



Net Worth Statement Analysis

Introduction

Application of the information contained in the Net Worth Statement is accomplished by the analysis of the various relationships between its three components - assets, liabilities and net worth. This allows you to develop a detailed picture of the financial health of the farm business at a specific point in time. Proper use of these financial health indicators will help you make sound farm business management decisions.

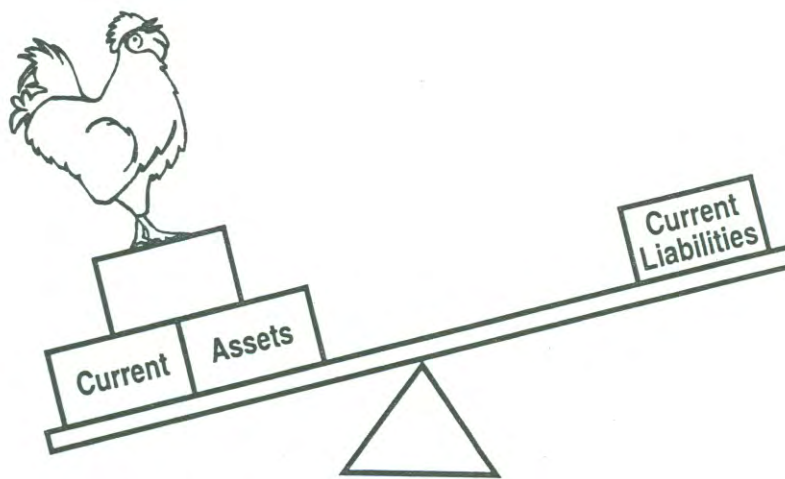
Performance Objectives

Upon completing the material in this module you will be able to:

- identify areas of the Net Worth Statement used in financial analysis;
- use three methods to evaluate business liquidity;
- use three methods to evaluate business solvency; and
- analyze your Net Worth Statement.

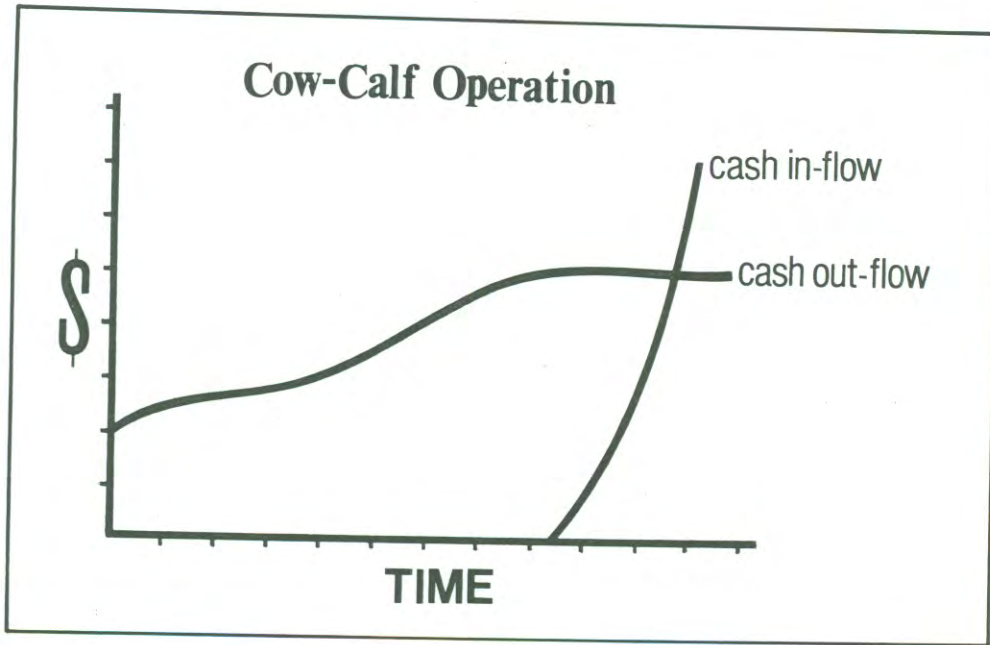
Liquidity

Liquidity measures the farm's ability to meet its financial obligations (debts) as they come due without disrupting normal business operations. In the previous module, you learned that the Net Worth Statement measures debts coming due within the year in the current liabilities section and that the current asset section included liquid assets that could easily be converted into cash. Therefore, liquidity is a measure of the relationship between current assets and current liabilities.



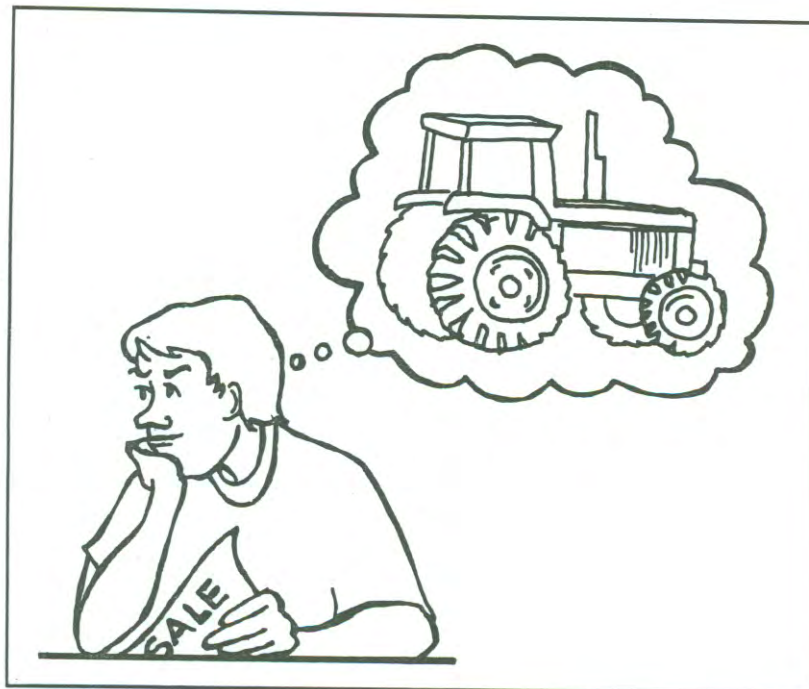
The key portion of the liquidity definition is - **to meet its financial obligations as they come due without disrupting normal business operations.** A farm may have more total assets than total liabilities (a positive net worth) but still not be liquid. Funds for debt repayment need to be generated from farm production not from the sale of production assets (machinery and land) that would disrupt business operation.

Farm businesses often have their liquidity needs magnified by the time lag between cash outflow and cash inflow. Consider the situation of a dairy farm with relatively regular and stable cash inflow and outflow versus a cow-calf operation. The cow-calf operation experiences varying amounts of cash outflow throughout the year but has cash flowing in only once a year when the calves are sold.



Not only is liquidity required to meet current debt requirements but it is also essential to allow the farm manager to deal with risks experienced in agricultural operations such as the uncertainty of prices, yields and production costs. As uncertainty increases so does the need for liquidity.

Conversely, unforeseen investment opportunities to increase business profitability often arise (have I got a deal for you!). This places a new claim on cash for either full payment or a down payment accompanied by a repayment schedule for some time in the future. Increased liquidity provides the manager with the ability to take advantage of these opportunities as they present themselves.



The better the liquidity position of the business, the more flexibility the manager has to respond to change - either positive or negative.

Liquidity cannot totally evaluate the farm's ability to meet all cash commitments. Liquidity is only measured on the date that the Net Worth Statement is created. It does not measure or predict timing or adequacy of future inflows in relation to outflows. Current assets can't always be sold immediately because of quota restrictions or more favourable price expectations and liabilities are not due instantly. Also, there are several substantial non-farm claims on cash (like family living costs) that are not accounted for in liquidity measurement.

While a strong liquidity position is necessary, it is possible to have too much liquidity. The objective of the farm business is to maximize profitability - excess investment in low yielding current assets could be shifted to higher yielding intermediate or long term assets or high cost term liabilities could be reduced.

Liquidity Measures

Liquidity may be measured in absolute terms (a dollar amount) by Working Capital or in relative terms (a ratio) by the Current Ratio or the Debt Structure Ratio.

Working Capital

Working Capital is simply the dollar difference between current assets and current liabilities. It is the amount available to finance upcoming production after the sale of current farm assets and payment of all current farm liabilities. The greater the amount of Working Capital, the more liquid the business.

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

Let's review the example of the Shady Bend Farm and determine Working Capital for that operation.

Name: Shady Bend Farm Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$1,750	Operating Loan	\$14,000
Seed and Feed Inventory	\$4,425	Cash Advances	\$9,500
Grain and Feed Inventory	\$26,325	Accounts Payable	\$3,750
Market Livestock Inventory	\$21,000	Intermediate Principal Due	\$3,000
Supplies Inventory	\$3,663	Long Term Principal Due	\$6,116
Notes and Accounts Receivable	\$10,000	Intermediate Accrued Interest	\$164
Personal and Other	\$1,975	Long Term Accrued Interest	\$3,617
Total Current Assets	\$69,138	Total Current Liabilities	\$40,147

$$\text{Working capital} = \text{Current Assets} - \text{Current Liabilities} = \$69,138 - \$40,147 = \$28,991$$

Working Capital needs to be positive for the business to be liquid. However, there is no hard and fast rule as to the ideal amount. Acceptable Working Capital will vary from farm to farm depending upon the type of farm, its size and the amount of risk associated with its production enterprises.

The excess of Working Capital over current liabilities is also an important factor to consider. A farm with \$5,000 in Working Capital with current liabilities of \$10,000 is in a far better position (with respect to the ability to withstand risk), than one with \$5,000 in Working Capital with current liabilities of \$30,000.

Since Working Capital is an absolute measure of liquidity - that is, it is measured as a specific dollar amount, the amount calculated will vary from farm to farm. Therefore, it is not useful in comparing one farm to another or to a benchmark for management decision making purposes.

Exercise 7

Determine the Working Capital for John and Diane Blake given the information contained in their Net Worth Statement.

Compare your answers with those given on page 37.

Name: John and Diane Blake

Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on hand	\$1,585	Operating Loan	\$20,000
Seed and Feed Inventory	\$7,119	Cash Advances	\$5,100
Grain and Feed Inventory	\$17,250	Accounts Payable	\$1,600
Market Livestock Inventory	\$7,450	Intermediate Principal Due	\$6,511
Supplies Inventory	\$1,260	Long Term Principal Due	\$5,000
Notes and Accounts Receivable	\$8,147	Intermediate Accrued Interest	\$747
Personal	\$237	Long Term Accrued Interest	\$436
Total Current Assets	\$43,048	Total Current Liabilities	\$39,394

Working Capital =

Current Ratio

The Current Ratio or Liquidity Ratio is another method to determine liquidity. This is a relative measure (a ratio) that examines the proportional relationship between current assets and current liabilities.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

If the ratio calculated is greater than 1, then the business is liquid. A ratio less than 1 indicates that current assets are less than current liabilities and the business would not be able to meet its financial obligations from sales of current assets.

Let's determine the Current Ratio for the Shady Bend Farm using the appropriate section of its Net Worth Statement.

Name: Shady Bend Farm Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$1,750	Operating Loan	\$14,000
Seed and Feed Inventory	\$4,425	Cash Advances	\$9,500
Grain and Feed Inventory	\$26,325	Accounts Payable	\$3,750
Market Livestock Inventory	\$21,000	Intermediate Principal Due	\$3,000
Supplies Inventory	\$3,663	Long Term Principal Due	\$6,116
Notes and Accounts Receivable	\$10,000	Intermediate Accrued Interest	\$164
Personal and Other	\$1,975	Long Term Accrued Interest	\$3,617
Total Current Assets	\$69,138	Total Current Liabilities	\$40,147

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\$69,138}{\$40,147} = 1.72$$

A ratio of 1.72 indicates that the Shady Bend Farm has \$1.72 of current assets for every \$1.00 of current liabilities. This statement is useful to describe the relationship between current assets and current liabilities.

There is no definite “ideal” Current Ratio. However, since the Current Ratio is a relative measure of liquidity (a ratio), it will provide a comparison between similar farms or to a benchmark. An acceptable ratio will depend upon the type of farm, the risks associated with its enterprises and the present amount of current debt. Dairy, hog or egg laying operations can withstand lower Current Ratios because of their regular and reasonably constant cash flows (if their present current debt level is not too high). On the other end of the scale would be farm businesses that market their production only once a year (cow-calf operations, forage growers, or seed growers) and therefore, they require higher Current Ratios to finance production over the course of the year.

Remember - since the Current Ratio is calculated at a specific point in time (the Net Worth Statement date), it will change throughout the year. Therefore, depending on the date of calculation, a Current Ratio of 1.5 or 2.0 may be desirable to allow for price or production changes that could occur. The higher the Current Ratio, the better able the farm is to shield itself from risk.

Exercise 8

Determine the Current Ratio for John and Diane Blake given the information contained in their Net Worth Statement.

Compare your answers with those given on page 38.

Name: John and Diane Blake

Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on hand	\$1,585	Operating Loan	\$20,000
Seed and Feed Inventory	\$7,119	Cash Advances	\$5,100
Grain and Feed Inventory	\$17,250	Accounts Payable	\$1,600
Market Livestock Inventory	\$7,450	Intermediate Principal Due	\$6,511
Supplies Inventory	\$1,260	Long Term Principal Due	\$5,000
Notes and Accounts Receivable	\$8,147	Intermediate Accrued Interest	\$747
Personal	\$237	Long Term Accrued Interest	\$436
Total Current Assets	\$43,048	Total Current Liabilities	\$39,394

Current Ratio =

Now make a statement about the Current Ratio you have calculated for the Blakes.

The Blakes have _____ of _____ for every _____ of _____.

Debt Structure Ratio

The Debt Structure Ratio measures the proportional relationship between current liabilities and total liabilities and is often used in conjunction with Working Capital or the Current Ratio when assessing business liquidity.

$$\text{Debt Structure Ratio} = \frac{\text{Current Liabilities}}{\text{Total Liabilities}}$$

Let's determine the Debt Structure Ratio for the Shady Bend Farm as illustrated by the liabilities section of its Net Worth Statement.

LIABILITIES	
Current	
Operating Loan	\$14,000
Cash Advances	\$9,500
Accounts Payable	\$3,750
Intermediate Principal Due	\$3,000
Long Term Principal Due	\$6,116
Intermediate Accrued Interest	\$164
Long Term Accrued Interest	\$3,617
Total Current Liabilities	\$40,147
Intermediate	
Breeding Stock Loans	_____
Machinery and Equipment Loans	\$6,000
Total Intermediate Liabilities	\$6,000
Long Term	
Building Loans	\$49,574
Land Loans	\$99,706
Total Long Term Liabilities	\$149,280
TOTAL LIABILITIES	\$195,427

$$\text{Debt Structure Ratio} = \frac{\text{Current Liabilities}}{\text{Total Liabilities}} = \frac{\$40,147}{\$195,427} = .21$$

A Debt Structure Ratio of .21 would indicate that 21% of total business debts are in the current position (that is, are current liabilities).

Exercise 9

Determine the Debt Structure Ratio for John and Diane Blake given the information contained in the liabilities component of their Net Worth Statement.

Compare your answers with those given on page 39.

LIABILITIES	
Current	
Operating Loan	\$20,000
Cash Advances	\$5,100
Accounts Payable	\$1,600
Intermediate Principal Due	\$6,511
Long Term Principal Due	\$5,000
Intermediate Accrued Interest	\$747
Long Term Accrued Interest	\$436
Total Current Liabilities	\$39,394
Intermediate	
Breeding Stock Loans	\$25,112
Machinery and Equipment Loans	\$12,000
Total Intermediate Liabilities	\$37,112
Long Term	
Building Loans	_____
Land Loans	\$30,000
Total Long Term Liabilities	\$30,000
TOTAL LIABILITIES	\$106,506

Debt Structure Ratio =

Now make a statement about the Debt Structure Ratio you have calculated for the Blakes.

The Blakes have _____ of their _____ in the _____.

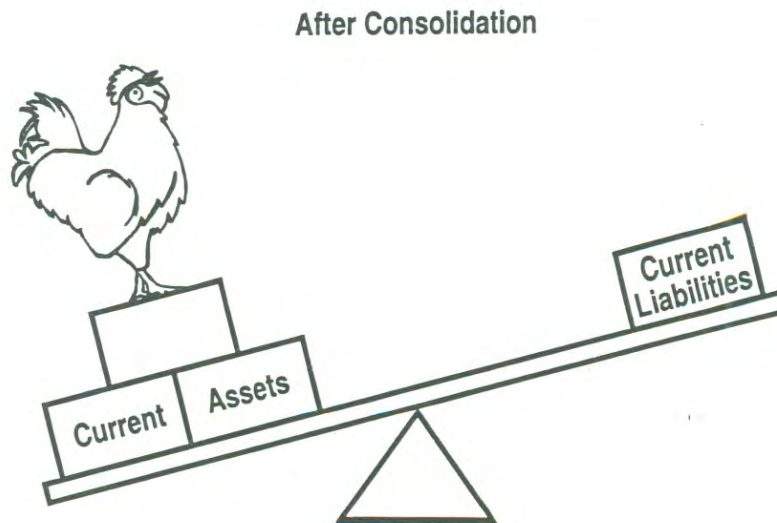
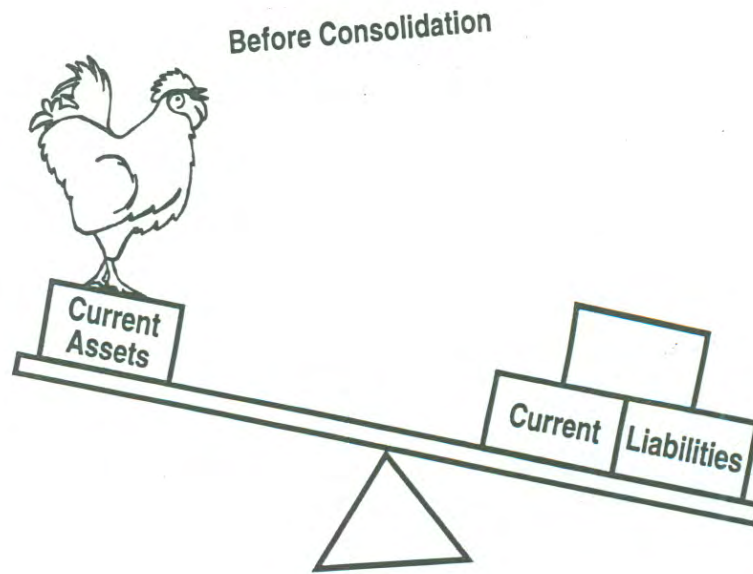
A high Debt Structure Ratio is desirable if the business has positive Working Capital (a Current Ratio greater than 1). This would indicate that debt is being paid back in a relatively short time period.

Consider the case of a farm with positive Working Capital (a Current Ratio greater than 1) and a Debt Structure Ratio of 1. In one year, this farm would be debt free.

LIABILITIES	
Current	
Operating Loan	\$5,500
Cash Advances	_____
Accounts Payable	_____
Intermediate Principal Due	\$1,250
Long Term Principal Due	\$5,700
Intermediate Accrued Interest	\$225
Long Term Accrued Interest	\$201
Total Current Liabilities	\$12,876
Intermediate	
Breeding Stock Loans	_____
Machinery and Equipment Loans	_____
Total Intermediate Liabilities	_____
Long Term	
Building Loans	_____
Land Loans	_____
Total Long Term Liabilities	_____
TOTAL LIABILITIES	\$12,876

$$\text{Debt Structure Ratio} = \frac{\text{Current Liabilities}}{\text{Total Liabilities}} = \frac{\$12,876}{\$12,876} = 1.00$$

Conversely, farms with negative Working Capital (a Current Ratio less than 1) and an accompanying high Debt Structure Ratio could benefit by having their debt restructured to reduce the amount of debt in the current position. This is usually accomplished by a consolidation of operating loans and/or accounts payable into intermediate or long term loans to produce positive Working Capital (a Current Ratio greater than 1). Liquidity is improved by lengthening the debt repayment time frame.



Consider the case of the Shady Bend Farm if its outstanding operating loan on January 1, 20X1 was \$55,000 (not \$14,000, as in our previous examples):

Net Worth Statement

Name: Shady Bend Farm Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$1,750	Operating Loan	\$55,000
Seed and Feed Inventory	\$4,425	Cash Advances	\$9,500
Grain and Feed Inventory	\$26,325	Accounts Payable	\$3,750
Market Livestock Inventory	\$21,000	Intermediate Principal Due	\$3,000
Supplies Inventory	\$3,663	Long Term Principal Due	\$6,116
Notes and Accounts Receivable	\$10,000	Intermediate Accrued Interest	\$164
Personal and Other	\$1,975	Long Term Accrued Interest	\$3,617
Total Current Assets	\$69,138	Total Current Liabilities	\$81,147
Intermediate		Intermediate	
Breeding Stock	\$13,875	Breeding Stock Loans	_____
Machinery and Equipment	\$71,000	Machinery and Equipment Loans	\$6,000
Personal	\$15,000	Personal Loans	_____
Stocks and Bonds	\$2,500	Consolidation Loans	_____
Other	\$13,400	Other	_____
Total Intermediate Assets	\$115,775	Total Intermediate Liabilities	\$6,000
Fixed		Long Term	
Land	\$202,680	Building Loans	\$49,574
Buildings	\$124,500	Land Loans	\$99,706
Co-operative Equity	\$2,261	Other	_____
Total Fixed Assets	\$329,441	Total Long Term Liabilities	\$149,280
TOTAL ASSETS	\$514,354	TOTAL LIABILITIES	\$236,427
			NET WORTH
			\$277,927

The Shady Bend Farm has a liquidity problem.

Working Capital = -\$12,009

Current Ratio = .85

Debt Structure = .34

Liquidity can be improved by consolidating the outstanding operating loan and the accounts payable into a 10 year loan of \$58,750 with equal principal payments of \$5,875 per year.

Net Worth Statement

Name: Shady Bend Farm Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$1,750	Operating Loan	_____
Seed and Feed Inventory	\$4,425	Cash Advances	\$9,500
Grain and Feed Inventory	\$26,325	Accounts Payable	_____
Market Livestock Inventory	\$21,000	Intermediate Principal Due	\$8,875
Supplies Inventory	\$3,663	Long Term Principal Due	\$6,116
Notes and Accounts Receivable	\$10,000	Intermediate Accrued Interest	\$164
Personal and Other	\$1,975	Long Term Accrued Interest	\$3,617
Total Current Assets	\$69,138	Total Current Liabilities	\$28,272
Intermediate		Intermediate	
Breeding Stock	\$13,875	Breeding Stock Loans	_____
Machinery and Equipment	\$71,000	Machinery and Equipment Loans	\$6,000
Personal	\$15,000	Personal Loans	_____
Stocks and Bonds	\$2,500	Consolidation Loans	\$52,875
Other	\$13,400	Other	_____
Total Intermediate Assets	\$115,775	Total Intermediate Liabilities	\$58,8750
Fixed		Long Term	
Land	\$202,680	Building Loans	\$49,574
Buildings	\$124,500	Land Loans	\$99,706
Co-operative Equity	\$2,261	Other	_____
Total Fixed Assets	\$329,441	Total Long Term Liabilities	\$149,280
TOTAL ASSETS	\$514,354	TOTAL LIABILITIES	\$236,427
NET WORTH			\$277,927

- Increased **Intermediate Principal Due** from addition of Consolidation Loan payment.
- New **Consolidation Loan**.

Exercise 10

Review the Net Worth Statement (with the consolidation loan) for the Shady Bend Farm found on the previous page. Calculate Working Capital, the Current Ratio and the Debt Structure Ratio and determine the difference from the figures calculated before the operating loan and accounts payable were consolidated.

Compare your answers with those given on page 40.

Working Capital =

Change in Working Capital =

Current Ratio =

Change in Current Ratio =

Debt Structure Ratio =

Change in Debt Structure Ratio =

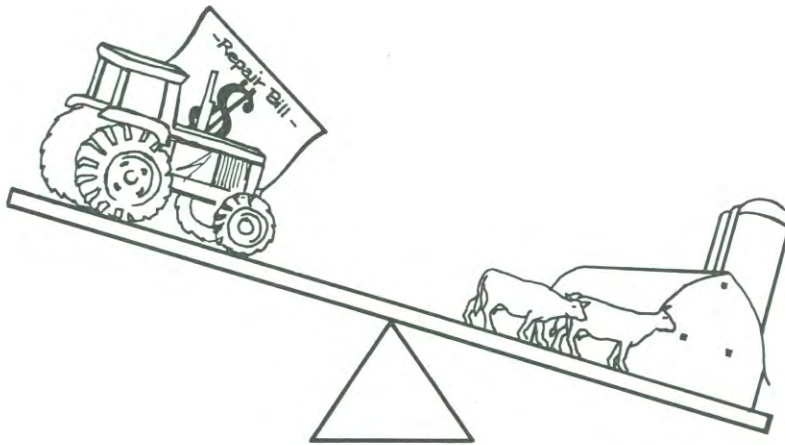
Complete the following statements based on the new ratios you have calculated for the Shady Bend Farm.

The Shady Bend Farm has _____ of _____ for every _____ of _____.

The Shady Bend Farm has _____ of its _____ in the _____.

Solvency

Solvency refers to the ability of the business to meet its total debt obligations determined by comparing the amount of borrowed capital used to the amount of owner's equity invested in the business. It is a measure of the risk bearing ability of the farm to carry on business after financial adversity.



An acceptable solvency position depends upon the size of the farm and the enterprises associated with it and also upon the management ability of the farmer and the measures he takes to shield the farm from risk. Minimizing risk reduces the potential for a claim on net worth from an unfavourable event. This could take the form of crop insurance, hedging, forward contracting, etc.

Like liquidity, solvency also has limitations as a financial health indicator. Income variability and the risk associated with production and marketing affect the farm's solvency position. Also, solvency does not measure how wisely debt is being used. If the solvency position is strong, the possibility of paying off debt should be examined to reduce interest costs.

Solvency Measures

Like liquidity, solvency may be measured in three ways - absolutely (a dollar amount) by Net Worth, relatively (a ratio) by the Debt Ratio and the Leverage Ratio.

Net Worth

A quick and simple method to determine solvency is to examine the value of net worth. Earlier you learned that net worth was determined by subtracting total liabilities from total assets. Therefore, it really is a measure of solvency because it compares owner's equity (net worth) to borrowed capital (liabilities). If net worth is positive (total assets greater than total liabilities), the business is solvent.

If net worth is negative (total assets are less than total liabilities) then the business is insolvent or bankrupt.

However, since this is an absolute measure, it is not useful for comparing different farms.

Debt Ratio

The Debt Ratio (sometimes called the Solvency Ratio or Debt to Asset Ratio) examines the proportional relationship between total liabilities and total assets.

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

If the Debt Ratio is less than 1, the business is solvent. A ratio greater than 1 would indicate that total liabilities are greater than total assets and therefore the business is insolvent.

Let's determine the Debt Ratio for the Shady Bend Farm.

Net Worth Statement

Name: Shady Bend Farm Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$1,750	Operating Loan	\$14,000
Seed and Feed Inventory	\$4,425	Cash Advances	\$9,500
Grain and Feed Inventory	\$26,325	Accounts Payable	\$3,750
Market Livestock Inventory	\$21,000	Intermediate Principal Due	\$3,000
Supplies Inventory	\$3,663	Long Term Principal Due	\$6,116
Notes and Accounts Receivable	\$10,000	Intermediate Accrued Interest	\$164
Personal and Other	\$1,975	Long Term Accrued Interest	\$3,617
Total Current Assets	\$69,138	Total Current Liabilities	\$40,147
Intermediate		Intermediate	
Breeding Stock	\$13,875	Breeding Stock Loans	_____
Machinery and Equipment	\$71,000	Machinery and Equipment Loans	\$6,000
Personal	\$15,000	Personal Loans	_____
Stocks and Bonds	\$2,500	Consolidation Loans	_____
Other	\$13,400	Other	_____
Total Intermediate Assets	\$115,775	Total Intermediate Liabilities	\$6,000
Fixed		Long Term	
Land	\$202,680	Building Loans	\$49,574
Buildings	\$124,500	Land Loans	\$99,706
Co-operative Equity	\$2,261	Other	_____
Total Fixed Assets	\$329,441	Total Long Term Liabilities	\$149,280
TOTAL ASSETS	\$514,354	TOTAL LIABILITIES	\$195,427
NET WORTH			\$318,927

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}} = \frac{\$195,427}{\$514,354} = .38$$

A Debt Ratio of .38 indicates that 38% of the business assets are debt financed.

Since the Debt Ratio is a relative measure of solvency, it can be used for comparisons between farms. Ratios of up to .40 to .50 are generally considered safe in the farming industry. However, ratio acceptability would depend upon the nature of the farm and its enterprises. Farms with regular and regulated cash flows (such as dairies) can withstand higher Debt Ratios. However the ability to withstand higher Debt Ratios is more a function of profitability - more funds are available for reducing debt (perhaps at a very fast rate).

Use caution when using the Debt Ratio in financial decision making. Having a favourable Debt Ratio (high net worth) does not indicate debt repayment ability and therefore can lead to a false sense of security. Repayment ability is determined by **profitability** and **cash flow**.

Exercise 11

Calculate the Debt Ratio for the Blakes. Compare your answers with those given on page 41.

Net Worth Statement

Name: John & Diane Blake Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$1,585	Operating Loan	\$20,000
Seed and Feed Inventory	\$7,119	Cash Advances	\$5,100
Grain and Feed Inventory	\$17,250	Accounts Payable	\$1,600
Market Livestock Inventory	\$7,450	Intermediate Principal Due	\$6,511
Supplies Inventory	\$1,260	Long Term Principal Due	\$5,000
Notes and Accounts Receivable	\$8,147	Intermediate Accrued Interest	\$747
Personal and Other	\$237	Long Term Accrued Interest	\$436
Total Current Assets	\$43,048	Total Current Liabilities	\$39,394
Intermediate		Intermediate	
Breeding Stock	\$63,350	Breeding Stock Loans	\$25,112
Machinery and Equipment	\$33,200	Machinery and Equipment Loans	\$12,000
Personal	\$10,300	Personal Loans	_____
Other	\$12,780	Other	_____
Total Intermediate Assets	\$119,630	Total Intermediate Liabilities	\$37,112
Fixed		Long Term	
Land	\$53,280	Building Loans	_____
Buildings	\$2,000	Land Loans	\$30,000
RRSPs	\$4,600	Consolidation Loans	_____
Co-operative Equity	\$592	Other	_____
Non-Farm Real Estate	\$25,000	_____	_____
Total Fixed Assets	\$85,472	Total Long Term Liabilities	\$30,000
TOTAL ASSETS	\$248,150	TOTAL LIABILITIES	\$106,506
		NET WORTH	\$141,644

Debt Ratio =

Complete the following statement based on the Debt Ratio you have calculated for the Blakes.

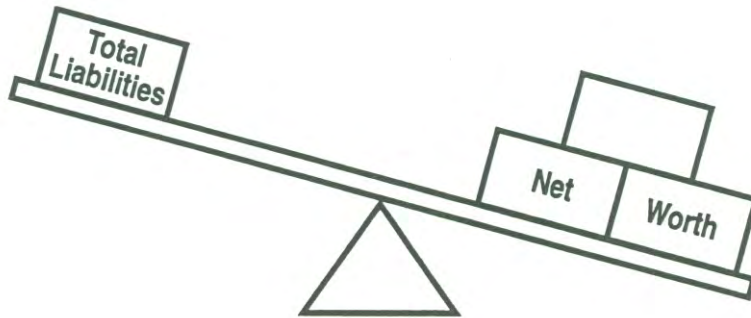
The Blakes have _____ of their _____.

Leverage Ratio

The Leverage Ratio (or Debt to Equity Ratio) measures exposure to financial risk by examining the extent to which creditors have financed the business (by liabilities) as compared to the owners (by net worth or equity).

$$\text{Leverage Ratio} = \frac{\text{Total Liabilities}}{\text{Net Worth}}$$

A ratio greater than 1 indicates that creditors are financing a higher proportion of the assets than is the owner. If the ratio is less than 1, the owner is financing the majority of the assets.



Let's determine the Leverage Ratio for the Shady Bend Farm.

Net Worth Statement

Name: Shady Bend Farm Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$1,750	Operating Loan	\$14,000
Seed and Feed Inventory	\$4,425	Cash Advances	\$9,500
Grain and Feed Inventory	\$26,325	Accounts Payable	\$3,750
Market Livestock Inventory	\$21,000	Intermediate Principal Due	\$3,000
Supplies Inventory	\$3,663	Long Term Principal Due	\$6,116
Notes and Accounts Receivable	\$10,000	Intermediate Accrued Interest	\$164
Personal and Other	\$1,975	Long Term Accrued Interest	\$3,617
Total Current Assets	\$69,138	Total Current Liabilities	\$40,147
Intermediate		Intermediate	
Breeding Stock	\$13,875	Breeding Stock Loans	_____
Machinery and Equipment	\$71,000	Machinery and Equipment Loans	\$6,000
Personal	\$15,000	Personal Loans	_____
Stocks and Bonds	\$2,500	Consolidation Loans	_____
Other	\$13,400	Other	_____
Total Intermediate Assets	\$115,775	Total Intermediate Liabilities	\$6,000
Fixed		Long Term	
Land	\$202,680	Building Loans	\$49,574
Buildings	\$124,500	Land Loans	\$99,706
Co-operative Equity	\$2,261	Other	_____
Total Fixed Assets	\$329,441	Total Long Term Liabilities	\$149,280
TOTAL ASSETS	\$514,354	TOTAL LIABILITIES	\$195,427
		NET WORTH	\$318,927

$$\text{Leverage Ratio} = \frac{\text{Total Liabilities}}{\text{Net Worth}} = \frac{\$195,427}{\$318,927} = .61$$

This Leverage Ratio indicates that the creditors of the Shady Bend Farm are financing 61 cents of farm assets for every \$1.00 financed by the owners.

The exposure to financial risk measured by the Leverage Ratio arises primarily from the vulnerability of the business to changes in asset value. Farm businesses with a high Leverage Ratio are more exposed to asset valuation changes. Even relatively small changes in asset values will have dramatic effects on the proportion of equity held in the business. Consider the following example:

Initial Situation		
	Farm A	Farm B
Assets	\$500,000	\$500,000
Liabilities	\$100,000	\$250,000
Net Worth	\$400,000	\$250,000
Leverage Ratio	.25	1.00

Now let's see what happens if there is a decrease in the value of assets held by the two farms:

10% Decrease in Asset Valuation		
	Farm A	Farm B
Assets	\$450,000	\$450,000
Liabilities	\$100,000	\$250,000
Net Worth	\$350,000	\$200,000
Leverage Ratio	.29	1.25
% decrease in Net Worth	12.5%	20%

As you can see, the decrease in asset valuation caused Farm B to have a relatively bigger decrease in net worth. This was entirely due to Farm B's higher Leverage Ratio. Asset devaluation also caused Farm B's Leverage Ratio to increase more than did Farm A's, which further compounds Farm B's problems. The drop in value of Farm B's assets has produced a Leverage Ratio greater than 1 - creditors are financing more of Farm B's operation than are the owners of Farm B.

Exercise 12

Calculate the Leverage Ratio for John and Diane Blake. Compare your answer with that given on page 42.

Net Worth Statement

Name: John & Diane Blake

Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$1,585	Operating Loan	\$20,000
Seed and Feed Inventory	\$7,119	Cash Advances	\$5,100
Grain and Feed Inventory	\$17,250	Accounts Payable	\$1,600
Market Livestock Inventory	\$7,450	Intermediate Principal Due	\$6,511
Supplies Inventory	\$1,260	Long Term Principal Due	\$5,000
Notes and Accounts Receivable	\$8,147	Intermediate Accrued Interest	\$747
Personal and Other	\$237	Long Term Accrued Interest	\$436
Total Current Assets	\$43,048	Total Current Liabilities	\$39,394
Intermediate		Intermediate	
Breeding Stock	\$63,350	Breeding Stock Loans	\$25,112
Machinery and Equipment	\$33,200	Machinery and Equipment Loans	\$12,000
Personal	\$10,300	Personal Loans	_____
Other	\$12,780	Other	_____
Total Intermediate Assets	\$119,630	Total Intermediate Liabilities	\$37,112
Fixed		Long Term	
Land	\$53,280	Building Loans	_____
Buildings	\$2,000	Land Loans	\$30,000
RRSPs	\$4,600	Consolidations Loans	_____
Co-operative Equity	\$592	Other	_____
Non-Farm Real Estate	\$25,000	_____	_____
Total Fixed Assets	\$85,472	Total Long Term Liabilities	\$30,000
TOTAL ASSETS	\$248,150	TOTAL LIABILITIES	\$106,506
		NET WORTH	\$141,644

Leverage Ratio =

Exercise 13

Calculate liquidity and solvency measures for your farm using the worksheet found at the end of this module. You may wish to attach them to the Farm Business Planner directly.

The Balance Sheet

Net Worth Statement based on historic cost less depreciation is called a Balance Sheet.

A Net Worth Statement lists all assets at fair market value. Increases in Net Worth over time could be due to an appreciation in asset values (eg. land) and not from business profitability. Therefore, it is important that managers understand the reasons for Net Worth increases. Basing management decisions on Net Worth increases caused by asset appreciation can produce disastrous results because the increase is not due to profitability.

Since the Balance Sheet does not account for artificial appreciation or depreciation in asset values, it provides a more accurate method to determine solvency trends over time.

Consider the following Net Worth Statement and corresponding Balance Sheet prepared for the same operation on the same date.

Net Worth Statement

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$3,550	Operating Loan	\$29,000
Grain and Feed Inventory	\$30,750	Accounts Payable	\$1,750
Market Livestock Inventory	\$14,000	Term Principal Due	\$5,550
Supplies Inventory	\$1,800	Accrued Interest	\$975
Total Current Assets	\$50,100	Total Current Liabilities	\$37,275
Intermediate		Intermediate	
Breeding Stock	\$84,000	Breeding Stock Loans	\$18,000
Machinery and Equipment	\$99,000	Machinery and Equipment Loans	\$16,000
Total Intermediate Assets	\$183,000	Total Intermediate Liabilities	\$34,000
Fixed		Long Term	
Land*	\$250,000	Land Loans	_____
Buildings	\$149,500	Building Loans	\$89,200
Total Fixed Assets	\$399,500	Total Long Term Liabilities	\$89,200
TOTAL ASSETS	\$632,600	TOTAL LIABILITIES	\$160,475
		NET WORTH	\$472,125

Balance Sheet

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$3,550	Operating Loan	\$29,000
Grain and Feed Inventory	\$30,750	Accounts Payable	\$1,750
Market Livestock Inventory	\$14,000	Term Principal Due	\$5,550
Supplies Inventory	\$1,800	Accrued Interest	\$975
Total Current Assets	\$50,100	Total Current Liabilities	\$37,275
Intermediate		Intermediate	
Breeding Stock	\$84,000	Breeding Stock Loans	\$18,000
Machinery and Equipment		Machinery and Equipment Loans	\$16,000
Cost	\$200,000		
- Depreciation	\$101,000		
	\$99,000		
Total Intermediate Assets	\$183,000	Total Intermediate Liabilities	\$34,000
Fixed		Long Term	
Land*	\$89,000	Land Loans	_____
Buildings		Building Loans	\$89,200
Cost	\$450,000		
- Depreciation	\$211,500		
	\$149,500		
Total Fixed Assets	\$238,500	Total Long Term Liabilities	\$89,200
TOTAL ASSETS	\$471,600	TOTAL LIABILITIES	\$160,475
		OWNER'S EQUITY	\$311,125

*Liabilities are identical. Land is valued at fair market value on the Net Worth Statement and at cost on the Balance Sheet.

Note that Net Worth as found in the Net Worth Statement is significantly different from Owner's Equity as found in the Balance Sheet. This is due to the differing values established for land in the two statements. The Net Worth Statement shows fair market value of the land whereas the Balance Sheet shows the historic cost of the land (what the farmer actually paid for it).

Since major swings in land market values (caused by inflation or deflation) are not accounted for in the Balance Sheet, changes in Owner's Equity over time (found by analyzing a series of Balance Sheets) are the result of the true growth in the business. The Balance Sheet has a direct link to the Accrued Income Statement and is not influenced by inflation or deflation.

Once a Net Worth Statement is prepared, it is relatively easy to create a Balance Sheet for the business.

Summary

The Net Worth Statement is primarily used as an indicator of the financial structure of the farm business by illustrating the debt and equity capital used to finance existing assets. It also provides a measure of the farm's ability to meet short term liabilities (liquidity) and to withstand risk (solvency).

The various tools used in Net Worth Statement analysis have been discussed. Working Capital and net worth are measured in absolute terms and therefore are not useful criteria to compare financial health between farms no matter how similar their characteristics. The Current Ratio, Debt Structure Ratio, Debt Ratio and Leverage Ratio are measured in relative terms and can be used in comparison with ratios generated for similar farms. A Balance Sheet (valuing assets at historic cost less depreciation) can be prepared from the Net Worth Statement to allow the manager to determine a true profitability trend over time.

Use caution when evaluating the ratios for your farm. Industry guidelines are just that – guidelines. Remember that acceptable ratios depend upon the nature of the farm business and the relative production and marketing risks associated with it.

Analysis of the Net Worth Statement using the analysis tools can provide you with useful information to apply when making management decisions. However, the value of this information is directly proportional to the accuracy of the information contained in the Net Worth Statement.

Don't forget your objective – to produce meaningful information that can be used by you, the farm business manager, to make sound management decisions.

A properly developed Net Worth Statement includes all assets valued at fair market value and all liabilities. Artificially inflating values of assets can produce disastrous results - it can fool the farm business manager into making unwise decisions. Remember, you are analyzing your statements for your farm. Be concerned that the information you provide is accurate and complete. Check that the ratios created are correct mathematically. Make sure that you understand their interpretation and application.

Net Worth Statements should be completed on the same day each year so you can establish trends for your farm business by comparing ratios collected over a number of years. This will provide a more reliable base for decision making. If the trend shows a deterioration of the business over time, find out why.

Don't make management decisions in a vacuum by using only the Net Worth Statement analytical tools presented in this module. You will look at the analysis of other statements in future modules. Later in the course you will combine their analytical tools with those of the Net Worth Statement to make the best possible farm business management decisions for your farm.



Module 4 Exercise Answers

Exercise 7

Name: John and Diane Blake

Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on hand	\$1,585	Operating Loan	\$20,000
Seed and Feed Inventory	\$7,119	Cash Advances	\$5,100
Grain and Feed Inventory	\$17,250	Accounts Payable	\$1,600
Market Livestock Inventory	\$7,450	Intermediate Principal Due	\$6,511
Supplies Inventory	\$1,260	Long Term Principal Due	\$5,000
Notes and Accounts Receivable	\$8,147	Intermediate Accrued Interest	\$747
Personal	\$237	Long Term Accrued Interest	\$436
Total Current Assets	\$43,048	Total Current Liabilities	\$39,394

Working Capital = Current Assets – Current Liabilities = \$43,048 - \$39,394 = \$3,654

Exercise 8

Name: John and Diane Blake

Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on hand	\$1,585	Operating Loan	\$20,000
Seed and Feed Inventory	\$7,119	Cash Advances	\$5,100
Grain and Feed Inventory	\$17,250	Accounts Payable	\$1,600
Market Livestock Inventory	\$7,450	Intermediate Principal Due	\$6,511
Supplies Inventory	\$1,260	Long Term Principal Due	\$5,000
Notes and Accounts Receivable	\$8,147	Intermediate Accrued Interest	\$747
Personal	\$237	Long Term Accrued Interest	\$436
Total Current Assets	\$43,048	Total Current Liabilities	\$39,394

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\$43,048}{\$39,394} = 1.09$$

Now make a statement about the Current Ratio you have calculated for the Blakes.

The Blakes have \$1.09 of current assets for every \$1.00 of current liabilities.

Exercise 9

LIABILITIES	
Current	
Operating Loan	\$20,000
Cash Advances	\$5,100
Accounts Payable	\$1,600
Intermediate Principal Due	\$6,511
Long Term Principal Due	\$5,000
Intermediate Accrued Interest	\$747
Long Term Accrued Interest	\$436
Total Current Liabilities	\$39,394
Intermediate	
Breeding Stock Loans	\$25,112
Machinery and Equipment Loans	\$12,000
Total Intermediate Liabilities	\$37,112
Long Term	
Building Loans	_____
Land Loans	\$30,000
Total Long Term Liabilities	\$30,000
TOTAL LIABILITIES	\$106,506

$$\text{Debt Structure Ratio} = \frac{\text{Current Liabilities}}{\text{Total Liabilities}} = \frac{\$39,394}{\$106,506} = .37$$

Now make a statement about the Debt Structure Ratio you have calculated for the Blakes.

The Blakes have 37% of their total liabilities in the current position.

Exercise 10

Working Capital = Current Assets – Current Liabilities = \$69,138 - \$28,272 = \$40,866

Change in Working Capital = \$40,866 – (-\$12,009) = \$52,875 an increase

Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\$69,138}{\$28,272} = 2.45$

Change in Current Ratio = 2.45 - .85 = 1.60 an increase

Debt Structure Ratio = $\frac{\text{Current Liabilities}}{\text{Total Liabilities}} = \frac{\$28,272}{\$236,427} = .12$

Change in Debt Structure Ratio = .34 - .12 = .22 a decrease

The Shady Bend Farm has \$2.45 of current assets for every \$1.00 of current liabilities.

The Shady Bend Farm has 12% of its total liabilities in the current position.

Exercise 11

Net Worth Statement

Name: John & Diane Blake Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$1,585	Operating Loan	\$20,000
Seed and Feed Inventory	\$7,119	Cash Advances	\$5,100
Grain and Feed Inventory	\$17,250	Accounts Payable	\$1,600
Market Livestock Inventory	\$7,450	Intermediate Principal Due	\$6,511
Supplies Inventory	\$1,260	Long Term Principal Due	\$5,000
Notes and Accounts Receivable	\$8,147	Intermediate Accrued Interest	\$747
Personal and Other	\$237	Long Term Accrued Interest	\$436
Total Current Assets	\$43,048	Total Current Liabilities	\$39,394
Intermediate		Intermediate	
Breeding Stock	\$63,350	Breeding Stock Loans	\$25,112
Machinery and Equipment	\$33,200	Machinery and Equipment Loans	\$12,000
Personal	\$10,300	Personal Loans	_____
Other	\$12,780	Other	_____
Total Intermediate Assets	\$119,630	Total Intermediate Liabilities	\$37,112
Fixed		Long Term	
Land	\$53,280	Building Loans	_____
Buildings	\$2,000	Land Loans	\$30,000
RRSPs	\$4,600	Consolidation Loans	_____
Co-operative Equity	\$592	Other	_____
Non-Farm Real Estate	\$25,000	_____	_____
Total Fixed Assets	\$85,472	Total Long Term Liabilities	\$30,000
TOTAL ASSETS	\$248,150	TOTAL LIABILITIES	\$106,506
			NET WORTH
			\$141,644

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}} = \frac{\$106,506}{\$248,150} = .43$$

Complete the following statement based on the Debt Ratio you have calculated for the Blakes.

The Blakes have 43% of their assets debt financed.

Exercise 12

Net Worth Statement

Name: John & Diane Blake

Date: January 1, 20X1

ASSETS		LIABILITIES	
Current		Current	
Cash on Hand	\$1,585	Operating Loan	\$20,000
Seed and Feed Inventory	\$7,119	Cash Advances	\$5,100
Grain and Feed Inventory	\$17,250	Accounts Payable	\$1,600
Market Livestock Inventory	\$7,450	Intermediate Principal Due	\$6,511
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Personal and Other	\$237	Long Term Accrued Interest	\$436
Total Current Assets	\$43,048	Total Current Liabilities	\$39,394
Intermediate		Intermediate	
Breeding Stock	\$63,350	Breeding Stock Loans	\$25,112
Machinery and Equipment	\$33,200	Machinery and Equipment Loans	\$12,000
Personal	\$10,300	Personal Loans	_____
Other	\$12,780	Other	_____
Total Intermediate Assets	\$119,630	Total Intermediate Liabilities	\$37,112
Fixed		Long Term	
Land	\$53,280	Building Loans	_____
Buildings	\$2,000	Land Loans	\$30,000
RRSPs	\$4,600	Consolidations Loans	_____
Co-operative Equity	\$592	Other	_____
Non-Farm Real Estate	\$25,000	_____	_____
Total Fixed Assets	\$85,472	Total Long Term Liabilities	\$30,000
TOTAL ASSETS	\$248,150	TOTAL LIABILITIES	\$106,506
			NET WORTH
			\$141,644

$$\text{Leverage Ratio} = \frac{\text{Total Liabilities}}{\text{Net Worth}} = \frac{\$106,506}{\$141,644} = .75$$

Liquidity and Solvency Measures

Name: _____

Date: _____

Working Capital = Current Assets - Current Liabilities

Working Capital =

Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

Current Ratio =

Debt Structure Ratio = $\frac{\text{Current Liabilities}}{\text{Total Liabilities}}$

Debt Structure Ratio =

Debt Ratio = $\frac{\text{Total Liabilities}}{\text{Total Assets}}$

Debt Ratio =

Leverage Ratio = $\frac{\text{Total Liabilities}}{\text{Net Worth}}$

Leverage Ratio =