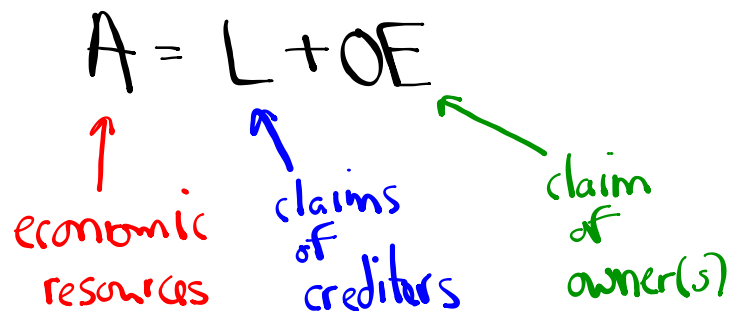


## CHAPTER 2

### ANALYZING CHANGES IN THE ACCOUNTING EQUATION

$$A = L + OE$$



The diagram shows the accounting equation  $A = L + OE$  with three arrows pointing to definitions:

- A red arrow points from  $A$  to the text "economic resources".
- A blue arrow points from  $L$  to the text "claims of creditors".
- A green arrow points from  $OE$  to the text "claim of owner(s)".

Topic 1 Terminology

**Business Transaction** - a financial event that affects assets, liabilities or owner's equity

simply means the event is expressed in terms of dollars or money



**Drawings** : a subelement decreasing owner's equity and resulting from the owner's withdrawal of assets for personal use.

## Topic 2 - ANALYZING AN EXPANDED EQUATION

### New Terms:

Revenue

Commissions

Expenses

Net Income

Net Loss

## Topic 2 - Analyzing an Expanded Equation

- The primary purpose of a business is to increase the owner's equity by earning a profit over a specified period of time.

**Revenue and Expense Transactions:** financial events that determine the profit (or loss) of a business.

We will begin by analyzing revenue transactions

Revenue + Expenses show up under the Owner's Equity Section.

Revenue will increase OE  
Expenses will decrease OE

Cash ↑

**REVENUE** - an inflow of assets resulting from the sale of goods or services

**COMMISSIONS** - the fees a business charges for buying or selling goods for example, real estate for clients (form of Revenue)

Transaction 8. We will continue with J. Emery Real Estate  
 As at Oct. 31, J. Emery Real Estate has received \$26800 in cash, referred to as commission, for buying and selling homes, land and other forms of real estate for clients.

ASSETS				=	LIABILITIES		+	OWNER'S EQUITY	
Cash	Auto- mobile	Furniture	Office Equipment	=	Bank Loan Payable	Accounts Payable	+	J.Emery, Capital	J. Emery, Drawing
\$51000	+ \$15000	+ \$9000	+ \$8000	=	\$16000	+ \$6000	+	\$63000	- \$12000
26800									
<u>71800</u>	<u>15000</u>	<u>9000</u>	<u>8000</u>						

\$26800 must be shown on the right side of the equation but where?

A commission represents revenue earned for the business and a new heading **REVENUE** is added to the accounting equation. Owner's Equity increases and the accounting equation is balanced.

ASSETS				=	LIABILITIES		+	OWNER'S EQUITY			
Cash	Auto- mobile	Furniture	Office Equipment	=	Bank Loan Payable	Accounts Payable	+	J.Emery, Capital	-	J. Emery, Drawing	Revenue
\$51000	+ \$15000	+ \$9000	+ \$8000		\$16000	+ \$6000		+ \$63000		- \$12000	
26800											\$ 26800
71800	15000	9000	8000		16000	6000		63000		-12000	26800
109800					22000			77800			
109800				=	109800						



**TRANSACTION 9** - On October 31st, J. Emery Real Estate earned commissions on credit <sup>Revenue</sup> by providing real estate services as follows: \$6000 for selling a building for Pat Rogers, \$4000 for selling a residence for R. Scobie and \$15000 for buying properties for Shannon Development Co. All clients were given 30 days in which to pay the commissions.

$$4000 + 6000 + 15000 = 25000$$

Cash	Accounts Rec	Auto-mobile	Furniture	Office Equipment	=	Bank Loan Payable	Accounts Payable	+	J.Emery, Capital	-	J. Emery, Drawing	+	Revenue
\$77800		+\$15000	+\$9000	+\$8000		\$16000	+\$6000		\$63000		\$12000		\$26800
	<u>25000</u>												<u>25000</u>
77800	25000	15000	9000	8000		16000	6000		63000	-	12000		51800
124800						22000			102800				

**Accounts Receivable:** an asset representing amounts due from customers.

We could say the business has claims on the property of these customers until their debts are paid.

Revenues increase cash or A/R

Does the inflow of cash automatically mean revenue has been earned by the business ???

Here are some examples.

1. The inflow of cash resulting from a customer's paying a debt means an increase in one asset, Cash, and a decrease in another asset Acc. Rec
2. When a business gets cash from a bank, this inflow of cash is offset by an increase in liabilities - usually in the form of a demand note payable to the bank.

### When is Revenue Recognized?

- should it be recognized at the time the sale is made, or when the cash is received from the customer (accounts receivable)?

GAAPs (Broad accounting rules and guidelines)

Revenue Principle tells that revenue must be recognized as at the time of the sale of goods, or at the time of the rendering of service.

**REVENUE PRINCIPLE:** defines revenue, measures revenue and recognizes revenue.

Here are two rules to remember when revenue is recognized as being earned:

1. In cash sales transactions sales revenue is earned as at the time when the good or service is received by the buyer and cash is received by the seller.
2. In credit sales, revenue is normally recognized as at the time of the sale of goods or as at the time of the rendering of services, and when a sales invoice is available showing credit terms.

accounts receivable



Revenue/Commission → increase cash or accounts receivable and increase owner's equity (revenue column)

### Analyzing Expense Transactions

- all businesses have expenses, and for one reason only - to support the activities that create revenue.

Expenses are the costs of the goods or services used up by a business to earn revenue

The costs can be for goods or services

#### Examples of Expenses:

Salaries and Wages  
Monthly Rent  
Telephone  
Advertising

Expenses → Decrease Cash ✓ or Increase accounts payable and owner's equity will decrease. ✓

**Expenses:** costs incurred by a business in earning revenue

## 2 Main Questions to Ask to Recognize An Accounting Expense

- 1.) Was the cost incurred (or used up) to earn revenue or to assist in revenue-making activities during a specified time period.
- 2.) Does the cost reduce owner's equity in the accounting equation as well as reducing an asset or increasing a liability.

**Transaction 10** - to create revenue, J. Emery Real Estate incurred several expenses. The business paid a total of \$6735 in cash as of Oct.31 for the following: Rent, \$1600; Salaries, \$4500; Utilities, \$595 and Telephone, \$40

Cash	Accounts	Auto-	Furniture	Office	Bank Loan	Accounts	J.Emery,	J. Emery,	
	Rec	mobile		Equip.	Payable	Payable	Capital	Drawing	Revenue
\$77800 +	\$25000 +	\$15000 +	\$9000 +	\$8000 =	\$16000 +	\$6000 +	\$63000 -	\$12000 +	\$51800
-6735									

There is a decrease of \$6735 on the left side of the equation because cash is decreased.

Some element on the right side must decrease by a similar amount. What element is it?

Liabilities - No - because all of the expenses were paid in cash

Owner's Equity - Yes - but which?

J. Emery, Capital

J. Emery, Withdrawal

Revenue

None of these are correct why?



J. Emery, Capital - shows an increase through owner's investment

J. Emery, Withdrawal - shows a decrease to owner's equity through withdrawal of assets for the owner's personal use

Revenue - shows an increase to owner's equity through the inflow of cash and credit received from sales.

How can we record the decrease in owner's equity?  
- by introducing a new heading **EXPENSES**

Assets					Liabilities		Owner's Equity			
Cash	Accts Rec	Auto- mobile	Furn.	Office Equip.	Bk Loan Payable	Accts Pay	J.Emery, Capital	J. Emery, Drawing	Revenue	Expenses
\$77800 -6735	+ \$25000	+ \$15000	+ \$9000	+ \$8000	= \$16000	+ \$6000	+ \$63000	- \$12000	+ \$51800	-6735
$  \begin{aligned}  & \$71065 + \$25000 + \$15000 + \$9000 + \$8000 = \$16000 + \$6000 + \$63000 - \$12000 + \$51800 - \$6735 \\  & \qquad \qquad \qquad \$128065 \qquad \qquad \qquad = \qquad \$22000 \qquad + \qquad \qquad \qquad \$106065  \end{aligned}  $										

Note: The minus sign for expenses simply shows that this item causes a decrease to owner's equity in the accounting equation.

Transaction 11 - On October 31, J. Emery receives a bill for \$2000 from The City Record, a local newspaper, for running three advertisements at different times in October. The bill states that J. Emery Real Estate has a period of 30 days in which to pay. *(credit sale)*

Assets					Liabilities		Owner's Equity														
Cash	Accts Rec	Auto-mobile	Furn.	Office Equip.	Bk Loan Payable	Accts Pay	J.Emery, Capital	J. Emery, Drawing	Revenue	Expenses											
\$71065	+	\$25000	+	\$15000	+	\$9000	+	\$8000	=	\$16000	+	\$6000	+	\$63000	-	\$12000	+	\$51800	-	\$6735	
<u>71065</u>		<u>25000</u>		<u>15000</u>		<u>9000</u>		<u>8000</u>		<u>16000</u>		<u>8000</u>		<u>63000</u>		<u>-12000</u>		<u>51800</u>		<u>-8735</u>	

GAAP's Expense Principle for recognizing expenses. Just as revenue was recognized as at a point of sale in an earlier section, the expense principle for recognizing expenses is:

Expenses must be recognized and recorded when they are incurred.

Expense principle: defines expense, measures expense, and recognizes expense

Does it matter when the expenses are paid for?

Why?

expenses must be recognized as soon as they are incurred because they directly offset the earning of revenue within the same time period.

Remember:

- Revenue is the inflow of cash and accounts receivable. (Cash ↑ , A/R ↑)

- Expenses use up economic resources, or result in the outflow of assets (Cash ↓ , A/P ↑)

## MATCHING REVENUE AND EXPENSES'

After accounting for revenue and expenses for a definite time period, for example one month, you subtract the total expenses from the total revenue earned to calculate the profit or loss for the period.

\*\*\* before you calculate you must make sure that revenues and expenses are matched for a specific time period.

Examples - to help understand the principle of matching - a GAAP

### #1 Incorrect (December expenses are missing)

Revenues (for Oct., Nov. and Dec.).....	\$15 000
Expenses (for Oct., Nov.).....	9 000
PROFIT .....	<u>\$ 6 000</u>

### #2 Incorrect (6 mths vs 12 mths)

Revenues (for 6 months).....	\$50 000
Expenses (for 12 months).....	60 000
LOSS .....	\$10 000

### #3 Correct

Revenues (for Sept 2009).....	\$10 000
Expenses (for Sept 2009).....	4 000
NET PROFIT.....	\$ 6 000

### #4 Correct

Revenues (for Year 2009).....	\$150 000
Expenses (for Year 2009).....	115 000
NET PROFIT.....	\$ 35 000

Revenue > Expense  
(Net Profit)

### #5 Correct

Revenues (for Year 2009).....	\$140 000
Expenses (for Year 2009).....	160 000
NET LOSS .....	\$ 20 000

Revenue < Expense  
(Net Loss)

Based on the examples:

What is the matching principle?

In reporting the net profit or loss of a business for a financial period, revenues must be matched with their expenses.



**MATCHING PRINCIPLE:** revenues and expenses must be correlated to report the net income (net loss) for an accounting period.

- In other words revenues of a certain time period(called the financial or accounting period) must be matched with the related expenses incurred for that same period.

Note: the length of the time period can vary from one month, three months, six months or even a year.

## Modern Term for Profit

previously we spoke of profit or loss, but in today's world we used the terms NET INCOME and NET LOSS. Going forward these are the terms you should use.

NET INCOME: the excess of revenue over expenses

NET LOSS: the excess of expenses over revenue

The word NET indicates that all revenues and all expenses have been reported and matched, for the same accounting period

## APPLYING THE MATCHING PRINCIPLE TO THE ACCOUNTING EQUATION

- to apply the matching principle, you must rearrange the expanded section - revenue and expenses of the accounting equation by:
  - placing total expenses under total revenue
  - calculating the difference between the amounts and listing this as net income or net loss

Assets					Liabilities			Owner's Equity											
Cash	Accts Rec	Auto- mobile	Furn.	Office Equip.	Bk Loan Payable	Accts Pay	J.Emery, Capital	J. Emery, Drawing	\$51800 - 6735	Revenue Expenses	Net Income								
\$71065	+	\$25000	+	\$15000	+	\$9000	+	\$8000	=	\$16000	+	\$8000	+	\$63000	-	\$2000	+	\$43065	

- Assume the matching principle has been verified
- Excess of revenue over related expenses is NET INCOME, a plus under OE
- OE will increase by the net income for the financial period.

If total expenses had exceeded the total revenue, the final result would have been a net loss (a minus amount). This would mean that the owner's equity for the period decreases by the amount of the loss.

In summary

- Revenue is the positive or plus part in calculating net income
- Expenses are the negative or minus part in calculating net income.
- The difference between the two will determine whether the owner's equity increases (net income) or decreases (net loss) as a result of the business transactions for a certain time period.

Owner's Equity			
		Net	
		Income	
		+\$52 800	Revenue
Capital	Drawing	<u>- 8 725</u>	Expenses
\$63000	- \$2000	+	\$43 065 Increase

Owner's Equity			
		Net	
		Loss	
		+\$51 800	Revenue
Capital	Drawing	<u>- 80 000</u>	Expenses
\$63000	- \$2000	-	\$28 200 Decrease

Problem 2-4 Page 43

Assets			=	Liabilities		+	Owner's Equity			
Cash	Accts. Rec.	Equip.	=	Bank Loan Payable	+	H.Chan, Capital	+	Revenue	-	Expenses
\$2510	+ \$1090	+ \$6400	=	\$1000	+	\$5000	+	\$8000	-	\$4000

a.) Rearrange the equation to show the matching of revenues and expenses for Sept.

b.) Did this matching produce a net income or a net loss for the period? Explain

Problem 2-4 Page 43

a)

Assets			=	Liabilities		+	Owner's Equity			
Cash	Accts. Rec.	Equip.	=	Bank Loan Payable	+	H.Chan, Capital	+	8000 Revenue	-	4000 Expenses
\$2510	+ \$1090	+ \$6400	=	\$1000	+	\$5000	+	4000	-	Net Income
<div style="border-top: 1px solid black; width: 100%; margin-top: 5px;"></div> <u>10000</u>			=	<div style="border-top: 1px solid black; width: 100%; margin-top: 5px;"></div> <u>1000</u>		+	<div style="border-top: 1px solid black; width: 100%; margin-top: 5px;"></div> <u>9000</u>			

b) It produced a net income because revenues were higher than expenses.

### Concept Reinforcement

Page 44-45 Do P2-5, P2-6

Page 46 Do MC2-4, MC2-5 and MC2-6

2.5

	Cash	A/R	Equip	Change in TA	A/P	Change in TL	Capital	Rev	Exp	Change in OE
Ops.	4000	400	2600	+7000	800	+800	6200	0	0	+6200
①	+1000			+1000				+1000		+1000
②		+3500		+3500				+3500		+3500
③	-900		+900	0						
④	+400			+400				+400		+400
⑤	-250			-250	-250	-250				
⑥	-120			-120					-120	-120
⑦			+300	+300	+300	+300				
⑧	-130			-130					-130	-130
⑨	+250	-250		0						
⑩	-3600			-3600					-3600	-3600
⑪	+1000	-1000		0						
Total	1650	2650	3800	8100	850	850	6200	4900	-3850	7250

Equality Check

$$A = L + OE$$

$$8100 = 850 + 7250$$

$$8100 = 8100 \quad \checkmark$$

b)

OWNER'S EQUITY

Capital	4900	Revenue
6200	3850	Expense
	1050	Net Income



