

# The Accounting Equation

**Assets = Liabilities + Owner's Equity**

A=Resources owned by the business

L=Creditor claim against total assets

OE=Owner's claim against total assets

**This relationship is the basic accounting equation-**

- Assets must equal the sum of liabilities and owner's equity.
- Liabilities appear before owner's equity in the basic accounting equation because they are paid first if a business is liquidated.

## Transaction Analysis

Transaction 1.

**Investment of Cash by Owner:** Ray Neal starts a smartphone app development company which he names Softbyte. On September 1, 2022, he invests \$15,000 cash in the business. This transaction results in an equal increase in assets and owner's equity.

Equation Analysis		<u>Assets</u>	=	<u>Liabilities</u>	+	<u>Owner's Equity</u>
		Cash	=			Owner's Capital
	(1)	<b>+\$15,000</b>	=			<b>+\$15,000</b>
						<b>Initial Investment</b>

Transaction 2.

**Purchase of Equipment for Cash:** Softbyte purchases computer equipment for \$7,000 cash. This transaction results in an equal increase and decrease in total assets, though the composition of assets changes.

Equation Analysis		<u>Assets</u>		=	<u>Liabilities</u>	+	<u>Owner's Equity</u>
		Cash	+ Equipment	=			Owner's Capital
		\$15,000					\$15,000
	(2)	<b>-7,000</b>	<b>+\$7,000</b>	=			
		\$ 8,000	+ \$7,000	=			\$15,000
		\$15,000					

Transaction 3.

**Purchase of Supplies on Credit:** Softbyte purchases headsets for \$1,600 from Mobile Solutions. Mobile Solutions agrees to allow Softbyte to pay this bill in October. This transaction is a purchase on account (a credit purchase). Assets increase because of the expected future benefits of using the headsets and computer accessories, and liabilities increase by the amount due Mobile Solutions.

Equation Analysis		<b>Assets</b>			=	<b>Liabilities</b>	+	<b>Owner's Equity</b>		
		Cash	+	Supplies	+	Equipment	=	Accounts Payable	+	Owner's Capital
		\$8,000				\$7,000				\$15,000
				<b>+\$1,600</b>				<b>+\$1,600</b>		
	(3)	\$8,000	+	\$1,600	+	\$7,000	=	\$1,600	+	\$15,000
		\$16,600				\$16,600				

**NB: "On account" or "on credit" means that cash will be paid at a later date.**

Transaction 4.

**Services Performed for Cash:** Softbyte receives \$1,200 cash from customers for app development services it has performed. This transaction represents Soft byte's principal revenue-producing activity. Recall that revenue increases owner's equity.

Equation Analysis		<u>Assets</u>			=	<u>Liabilities</u>	+	<u>Owner's Equity</u>				
		Cash	+	Supplies	+	Equipment	=	Accounts Payable	+	Owner's Capital	+	Revenues
		<u>\$8,000</u>		<u>\$1,600</u>		<u>\$7,000</u>		<u>\$1,600</u>		<u>\$15,000</u>		
		<b>+1,200</b>									<b>+1,200</b>	<b>Service Revenue</b>
		<u>\$9,200</u>	+	<u>\$1,600</u>	+	<u>\$7,000</u>	=	<u>\$1,600</u>	+	<u>\$15,000</u>	+	<u>\$1,200</u>
	(4)	<u>\$17,800</u>						<u>\$17,800</u>				

Transaction 5.

**Purchase of Advertising on Credit:** Softbyte receives a bill for \$250 from the Daily News for advertising on its online website but postpones payment until a later date. This transaction results in an increase in liabilities and a decrease in owner's equity. Recall that expenses decrease owner's equity.

Equation Analysis		<u>Assets</u>			=	<u>Liabilities</u>	+	<u>Owner's Equity</u>							
		Cash	+	Supplies	+	Equipment	=	Accounts Payable	+	Owner's Capital	+	Revenues	-	Expenses	
		\$9,200		\$1,600		\$7,000		\$1,600		\$15,000		\$1,200			
	(5)							<b>+250</b>						<b>-250</b>	<b>Adv. Exp.</b>
		<u>\$9,200</u>	+	<u>\$1,600</u>	+	<u>\$7,000</u>	=	<u>\$1,850</u>	+	<u>\$15,000</u>	+	<u>\$1,200</u>	-	<u>\$250</u>	
		\$17,800								\$17,800					

# Transaction 6.

**Services Performed for Cash and Credit:** Softbyte performs \$3,500 of app development services for customers. The company receives cash of \$1,500 from customers, and it bills the balance of \$2,000 on account. This transaction results in an equal increase in assets and owner's equity. Recall that **revenues increase owner's equity**.

Equation Analysis	Assets				=	Liabilities	+	Owner's Equity			
	Cash	Accounts Receivable	Supplies	Equipment		Accounts Payable	+	Owner's Capital	+	Revenues	- Expenses
	\$ 9,200		\$1,600	\$7,000		\$1,850		\$15,000		\$1,200	\$250
(6)	<b>+1,500</b>	<b>+2,000</b>								<b>+3,500</b>	<b>Ser. Rev.</b>
	\$10,700	\$2,000	\$1,600	\$7,000	=	\$1,850	+	\$15,000	+	\$4,700	- \$250
	\$21,300					\$21,300					

# Transaction 7.

**Payment of Expenses:** Softbyte pays the following expenses in cash for September: office rent \$600, salaries and wages of employees \$900, and utilities \$200. These payments result in an equal decrease in assets and owner's equity. Recall the expenses decrease owner's equity.

Equation Analysis	Assets				=	Liabilities	+	Owner's Equity			
	Cash	Accounts Receivable	Supplies	Equipment		Accounts Payable	+	Owner's Capital	+	Revenues	- Expenses
	\$ 10,700	\$2,000	\$1,600	\$7,000		\$1,850		\$15,000		\$4,700	\$ 250
(7)	<b>-1,700</b>										<b>-600 Rent Exp.</b>
											<b>-900 Sal./Wages Exp.</b>
											<b>-200 Utilities Exp.</b>
	\$ 9,000	\$2,000	\$1,600	\$7,000	=	\$1,850	+	\$15,000	+	\$4,700	- \$1,950
	\$19,600					\$19,600					

# Transaction 8.

**Payment of Accounts Payable:** Softbyte pays its \$250 Daily News bill in cash. The company previously (in Transaction 5) recorded the bill as an increase in Accounts Payable and a decrease in owner's equity.

Equation Analysis	Assets				=	Liabilities	+	Owner's Equity			
	Cash	Accounts Receivable	Supplies	Equipment		Accounts Payable	+	Owner's Capital	+	Revenues	- Expenses
	\$9,000	\$2,000	\$1,600	\$7,000		\$1,850		\$15,000		\$4,700	\$1,950
(8)	<b>-250</b>					<b>-250</b>					
	\$8,750	\$2,000	\$1,600	\$7,000	=	\$1,600	+	\$15,000	+	\$4,700	- \$1,950
	\$19,350					\$19,350					

Transaction 9.

**Receipt of Cash on Account:** Softbyte receives \$600 in cash from customers who had been billed for services (in Transaction 6). Transaction 9 does not change total assets, but it changes the composition of those assets.

Equation Analysis		Assets				=	Liabilities	+	Owner's Equity								
		Accounts					Accounts		Owner's								
		Cash	+	Receivable	+	Supplies	+	Equipment	=	Payable	+	Capital	+	Revenues	-	Expenses	
		\$8,750		\$2,000		\$1,600		\$7,000		\$1,600		\$15,000		\$4,700		\$1,950	
		+600		-600													
	(9)	\$9,350	+	\$1,400	+	\$1,600	+	\$7,000	=	\$1,600	+	\$15,000	+	\$4,700	-	\$1,950	
	\$19,350									\$19,350							

Transaction 10.

**Withdrawal of Cash by Owner:** Ray Neal withdraws \$1,300 in cash from the business for his personal use. This transaction results in an equal decrease in assets and owner's equity. Recall that **drawings decrease owner's equity**.

Equation Analysis		<u>Assets</u>				=	<u>Liabilities</u>	+	<u>Owner's Equity</u>									
		Accounts					Accounts		Owner's		Owner's							
		Cash	+	Receivable	+	Supplies	+	Equipment	=	Payable	+	Capital	-	Drawings	+	Revenues	-	Expenses
		\$9,350		\$1,400		\$1,600		\$7,000		\$1,600		\$15,000				\$4,700		\$1,950
	(10)	<b>-1,300</b>											<b>-1,300</b>					<b>Drawings</b>
		<u>\$8,050</u>	+	<u>\$1,400</u>	+	<u>\$1,600</u>	+	<u>\$7,000</u>	=	<u>\$1,600</u>	+	<u>\$15,000</u>	-	<u>\$1,300</u>	+	<u>\$4,700</u>	-	<u>\$1,950</u>
		\$18,050					\$18,050											

## Exercise

Tabular Analysis Transactions made by Virmari & Co., a public accounting firm, for the month of August are shown below. Prepare a tabular analysis which shows the effects of these transactions on the expanded accounting equation:

1. The owner invested \$25,000 cash in the business.
2. The company purchased \$7,000 of office equipment on credit.
3. The company received \$8,000 cash in exchange for services performed.
4. The company paid \$850 for the current month's rent.
5. The owner withdrew \$1,000 cash for personal use.
6. Billed customers \$8,000 for services performed.

## Practice Problem

Joan Robinson opens her own law office on July 1, 2022. During the first month of operations, the following transactions occurred.

1. Joan invested \$11,000 in cash in the law practice.
2. Paid \$800 for July rent on office space.
3. Purchased equipment on account \$3,000.
4. Performed legal services for clients for cash \$1,500.
5. Borrowed \$700 cash from a bank on a note payable.
6. Performed legal services for client on account \$2,000.
7. Paid monthly expenses: salaries and wages \$500, utilities \$300, and advertising \$100.
8. Joan withdrew \$1,000 cash for personal use.

## Instructions

- Prepare a tabular summary of the transactions.
- Financial Statement Prepare the income statement, owner's equity statement, and balance sheet at July 31, 2022, for Joan Robinson, Attorney.

### Solution

a.	Assets			=	Liabilities		+	Owner's Equity			
	Accounts				Notes	Accounts		Owner's	Owner's		
Transaction	Cash	+ Receivable	+ Equipment	=	Payable	+ Payable	+	Capital	- Drawings	+ Revenues	- Expenses
1.	+\$11,000			=				\$11,000			
2.	-800										-\$800
3.			+\$3,000	=		+\$3,000					
4.	+1,500									+\$1,500	
5.	+700				+\$700						
6.		+\$2,000								+\$2,000	
7.	-900										-500
											-300
											-100
8.	-1,000								-1,000		
	<u>\$10,500</u>	+ <u>\$2,000</u>	+ <u>\$3,000</u>	=	<u>\$700</u>	+ <u>\$3,000</u>	+ <u>\$11,000</u>	- <u>\$1,000</u>	+ <u>\$3,500</u>	- <u>\$1,700</u>	
	<u>\$15,500</u>				<u>\$15,500</u>						

b.

Joan Robinson, Attorney Income Statement For the Month Ended July 31, 2022		
Revenues		
Service revenue		\$3,500
Expenses		
Rent expense	\$800	
Salaries and wages expense	500	
Utilities expense	300	
Advertising expense	<u>100</u>	
Total expenses		<u>1,700</u>
Net income		<u>\$1,800</u>

Joan Robinson, Attorney Owner's Equity Statement For the Month Ended July 31, 2022		
Owner's capital, July 1		\$ 0
Add: Investments	\$11,000	
Net income	<u>1,800</u>	<u>12,800</u>
		12,800
Less: Drawings		<u>1,000</u>
Owner's capital, July 31		<u>\$11,800</u>

Joan Robinson, Attorney Balance Sheet July 31, 2022		
	<u>Assets</u>	
Cash		\$10,500
Accounts receivable		2,000
Equipment		<u>3,000</u>
Total assets		<u>\$15,500</u>
	<u>Liabilities and Owner's Equity</u>	
Liabilities		
Notes payable		\$ 700
Accounts payable		<u>3,000</u>
Total liabilities		3,700
Owner's equity		
Owner's capital		<u>11,800</u>
Total liabilities and owner's equity		<u>\$15,500</u>

### Home Task-1

Maisie Taft started her own consulting firm, Maisie Consulting, on May 1, 2022. The following transactions occurred during the month of May.

- May 1 Maisie invested \$7,000 cash in the business.
- 2 Paid \$900 for office rent for the month.
- 3 Purchased \$800 of supplies on account.
- 5 Paid \$125 to advertise in the County News.
- 9 Received \$4,000 cash for services performed.
- 12 Withdrew \$1,000 cash for personal use.
- 15 Performed \$6,400 of services on account.
- 17 Paid \$2,500 for employee salaries.
- 20 Made a partial payment of \$600 for the supplies purchased on account on May 3.
- 23 Received a cash payment of \$4,000 for services performed on account on May 15.
- 26 Borrowed \$5,000 from the bank on a note payable.
- 29 Purchased equipment for \$4,200 on account.
- 30 Paid \$275 for utilities

### Instructions

- a. Show the effects of the previous transactions on the accounting equation.
- b. Prepare an income statement for the month of May.
- c. Prepare a balance sheet at May 31, 2022.

### Home Task-2

On April 1, Julie Spengel established Spengel's Travel Agency. The following transactions were completed during the month.

- 1. Invested \$15,000 cash to start the agency.
- 2. Paid \$600 cash for April office rent.
- 3. Purchased equipment for \$3,000 cash.

4. Incurred \$700 of advertising costs in the Chicago Tribune, on account.
5. Paid \$900 cash for office supplies.
6. Performed services worth \$10,000: \$3,000 cash is received from customers, and the balance of \$7,000 is billed to customers on account.
7. Withdrew \$600 cash for personal use.
8. Paid Chicago Tribune \$500 of the amount due in transaction (4).
9. Paid employees' salaries \$2,500. 10. Received \$4,000 in cash from customers who have previously been billed in transaction (6).

**Instructions**

- a. Show the effects of the previous transactions on the accounting equation.
- b. Prepare an income statement for the month of April.
- c. Prepare a balance sheet at April 30.