

Review Key Vocabulary

compound interest, p. A13
loan, p. A24
term, p. A24
installment loan, p. A24
mortgage, p. A25

checking account, p. A30
checkbook registry, p. A30
debit card, p. A30
bad check, p. A31
credit card, p. A38

gross pay, p. A44
net pay, p. A44
payroll statement, p. A44

Review Examples and Exercises

B.1 Simple and Compound Interest (pp. A10–A15)

You want to invest \$400 for 2 years. Which account should you choose?

- Account A earns 4% simple interest per year.
- Account B earns 3% interest compounded annually.

Make two tables that show the account balances for 2 years.

Account A				Account B			
Year	Principal	4% Simple Interest	Balance at End of Year	Year	Principal and Interest	3% Compound Interest	Balance at End of Year
1	\$400	\$16	\$416	1	\$400.00	\$12.00	\$412.00
2	\$400	\$16	\$432	2	\$412.00	\$12.36	\$424.36

- ❖ Account A earns $\$432 - \$424.36 = \$7.64$ more than Account B after 2 years. So, you should choose Account A.

Exercises

1. You deposit \$500 in an account that earns 4% interest compounded annually. What is the account balance after 2 years?

B.2 Formula for Compound Interest (pp. A16–A21)

You deposit \$1800 in a savings account. The account earns 3% interest compounded annually. What is the balance after 7 years?

$$\begin{aligned}
 B &= P(1 + r)^t && \text{Write compound interest formula.} \\
 &= 1800(1 + 0.03)^7 && \text{Substitute.} \\
 &= 1800(1.03)^7 && \text{Add.} \\
 &\approx 2213.77 && \text{Simplify.}
 \end{aligned}$$

- ❖ The balance is \$2213.77 after 7 years.

Exercises

- An account earns 4% interest compounded annually. The balance after 5 years is \$7421.58. What is the principal?

B.3 Installment Loans (pp. A22–A27)

The principal on a home mortgage is \$145,000, the monthly payment is \$1081.08, and the term is 20 years. How much interest is paid on the loan?

The total amount paid for the mortgage is the product of the monthly payment and the number of payments. The interest paid on the loan is the difference of the total amount paid for the mortgage and the principal.

$$1081.08 \cdot 240 = 259,459.20 \quad \text{Multiply the monthly payment by number of payments.}$$

$$259,459.20 - 145,000 = 114,459.20 \quad \text{Subtract the principal from the total amount paid.}$$

∴ \$114,459.20 in interest is paid on the loan.

Exercises

- The principal on a home mortgage is \$250,000, the monthly payment is \$1580.17, and the term is 30 years. How much interest is paid on the loan?

B.4 Checking Accounts (pp. A28–A33)

Which check is the bad check?

Date	Check #	Transaction	Credit	Debit	Balance
		Balance Forward			89.37
11/1/12	528	Cell Phone Company		65.11	24.26
11/5/12	529	Grocery Store		52.08	-27.82
11/15/12		Deposit Paycheck	418.94		391.12
11/16/12	530	Credit Card Payment		200.00	191.12
11/30/12		Charity Donation		30.00	161.12
11/30/12		Magazine Subscription		20.00	141.12

The amount of Check #529 is greater than the available balance.

∴ So, Check #529 is the bad check.

Exercises

- Your monthly bank statement shows a balance of \$191.12. Explain why your balance does not agree with the bank statement.
- Your next two transactions are shown below. What is your new balance?
 - 12/1/12 Deposit \$300.00
 - 12/2/12 ATM Withdrawal \$60.00

B.5 Credit Cards (pp. A36–A41)

Rocco receives a credit card bill in the mail. The monthly interest rate is 1.1%. Find the interest charge.

Find the product of the monthly interest rate and the average daily balance.

$$0.011 \cdot 645.79 \approx \$7.10$$

∴ The interest charge is \$7.10.

Average Daily Balance	\$645.79
Statement Closing Date	06/01/12
Previous Balance	\$800.00
Payments	-400.00
Unpaid Balance	\$400.00
New Purchases	\$200.00
Interest Charge	
New Balance	

Exercises

- What is the new balance?
- If Rocco had paid \$600 on last month's bill, the average daily balance would be \$497.41. Find the interest charge and the new balance.

B.6 Payroll Deductions (pp. A42–A47)

What percent does Raj pay for health insurance?

NAME Raj Singh			PAY ENDING	PAY DATE	DEPARTMENT	NET PAY	
EARNINGS STATEMENT			02/24/12	02/24/12	P	744.21	
HOURS	RATE	AMOUNT	PAYROLL TAX WITHHELD				
80	13.50	1080.00	FEDERAL	SOC. SEC.	HEALTH INS.	MEDICARE	401K
			115.37	61.33	90.75	14.34	54.00
YTD GROSS PAY		GROSS PAY	YEAR TO DATE				
4320.00		1080.00	FEDERAL	SOC. SEC.	HEALTH INS.	MEDICARE	401K
			461.48	245.32	363.00	57.36	216.00

$$\frac{\text{amount for health insurance}}{\text{gross pay}} = \frac{90.75}{1080.00}$$

$$\approx 0.084 = 8.4\%$$

∴ Raj pays 8.4% for health insurance.

Exercises

- What percent does Raj pay for federal income tax?
- How much will Raj put in his 401(k) for the entire year?
- What is Raj's annual gross pay?