

Financial Literacy Capstone

Stages of Life Project

► Introduction

Life comes in stages. In this capstone, you will apply what you have learned in *Math for Financial Literacy* to four common stages of life. You will start as a senior in high school and make decisions for life after high school. After your education is complete, whether or not that includes education beyond high school, you begin a career. At this point in life, most people do not have a very impressive net worth, but it is the point where net worth can begin to grow. As your career progresses, your earnings and responsibilities will typically increase. After you retire, your financial responsibilities do not end. This capstone walks you through the *stages of life*, concluding with a summative exercise in which you complete activities for your own life.

For many of the exercises in this project, you will be asked to download data files from the companion website. The companion website is found at <https://www.g-wonlinetextbooks.com/0344>.

► Stages

- | | |
|---------|---------------------------|
| Stage 1 | Student Years |
| Stage 2 | Early Career Years |
| Stage 3 | Earning Years |
| Stage 4 | Retirement Years |

Student Years

STAGE 1

Working Part-Time

Working part-time while in high school can be a good way to start learning financial responsibility. You will earn money, which you will need to manage wisely. There are choices to make, such as how much to save and on what to spend your money. All of this starts with calculating how much money you will receive in your paycheck.

EXERCISE 1A

It is the holiday season, and you are looking to earn some money. You get a part-time job at a home improvement store earning \$15.35 per hour. The job pays time-and-a-half for hours over 40 in one week. Paychecks are issued every Friday. During the holiday break, you work 49.5 hours in one week. You live in a state with a 4.25% flat-rate state income tax, and you file your federal taxes as single with the standard withholding.

Using this information, along with the Social Security tax rate of 6.2%, the Medicare tax rate of 1.45%, and the federal tax table in **Figure 1**, calculate your net pay for this week. Round to the nearest cent.

Wage Bracket Method Tables for Manual Payroll Systems

WEEKLY Payroll Period

If the Adjusted Wage Amount (line 1h) is		Married Filing Jointly		Head of Household		Single or Married Filing Separately	
At least	But less than	Standard withholding	Form W-4, Step 2, Checkbox withholding	Standard withholding	Form W-4, Step 2, Checkbox withholding	Standard withholding	Form W-4, Step 2, Checkbox withholding
The Tentative Withholding Amount is:							
\$775	\$785	\$22	\$55	\$37	\$65	\$55	\$93
\$785	\$795	\$23	\$57	\$38	\$66	\$57	\$95
\$795	\$805	\$24	\$58	\$39	\$68	\$58	\$98
\$805	\$815	\$25	\$59	\$40	\$69	\$59	\$100
\$815	\$825	\$26	\$60	\$41	\$70	\$60	\$102
\$825	\$835	\$27	\$61	\$43	\$72	\$61	\$104
\$835	\$845	\$28	\$63	\$44	\$75	\$63	\$106
\$845	\$855	\$29	\$64	\$45	\$77	\$64	\$109
\$855	\$865	\$30	\$65	\$46	\$79	\$65	\$111
\$865	\$875	\$31	\$66	\$47	\$81	\$66	\$113
\$875	\$885	\$32	\$67	\$49	\$83	\$67	\$115
\$885	\$895	\$33	\$69	\$50	\$86	\$69	\$117
\$895	\$905	\$34	\$70	\$51	\$88	\$70	\$120
\$905	\$915	\$35	\$71	\$52	\$90	\$71	\$122
\$915	\$925	\$36	\$72	\$53	\$92	\$72	\$124
\$925	\$935	\$37	\$73	\$55	\$94	\$73	\$126
\$935	\$945	\$38	\$75	\$56	\$97	\$75	\$128
\$945	\$955	\$39	\$76	\$57	\$99	\$76	\$131
\$955	\$965	\$40	\$77	\$58	\$101	\$77	\$133
\$965	\$975	\$41	\$78	\$59	\$103	\$78	\$135
\$975	\$985	\$42	\$79	\$61	\$105	\$79	\$137
\$985	\$995	\$43	\$81	\$62	\$108	\$81	\$139
\$995	\$1,005	\$44	\$82	\$63	\$110	\$82	\$142
\$1,005	\$1,015	\$45	\$83	\$64	\$112	\$83	\$144
\$1,015	\$1,025	\$46	\$84	\$65	\$114	\$84	\$146

Goodheart-Willcox Publisher; (source) Internal Revenue Service

Figure 1 Federal Withholding Table

Paying for School

Pursuing education beyond high school can be expensive. You should look at all of your options for paying for continued education. These options can include applying for scholarships, grants, and student loans. You can also work part- or full-time to minimize the amount of money that you must take out in student loans.

EXERCISE 1B

As you plan for the next school year, you estimate your tuition, living expenses, and other school-related expenses as \$29,500. Your search for scholarship money resulted in scholarships and grants totaling \$8,500. You estimate that during the summer before the school year starts, you can earn \$5,420 (after taxes) by working full-time. You also estimate that you can earn an average of \$925 per month (after taxes) during the nine months of the school year.

What is the total you will need to borrow in the form of student loans to cover all your expenses for the school year?

Sharing Living Expenses

Sharing living expenses is an easy way to lower your monthly expenses. Most students in college share a rental house or apartment with at least one roommate. Often, students have two or more roommates. The more roommates, the more the living expenses are reduced for each person.

EXERCISE 1C

You have graduated high school and are now in college. Currently, you are living alone in a student apartment. Your monthly rent is \$700, and your utilities average \$160 per month. You and a friend decide to be roommates and find an apartment for \$1,025 per month. You expect the utilities to cost approximately \$210 per month.

You and your friend will pay an equal share of the rent and utilities. What is the total amount you will save each month on rent and utilities?

Securing Renters Insurance

Once you move out of your parents' or guardians' house, your belongings are no longer covered under their homeowners insurance. Whether you are renting or buying housing, you should purchase insurance to cover your personal belongings. If you are buying a house or condo, you will be *required* by the mortgage lender to purchase homeowners insurance, which will cover your personal belongings.

EXERCISE 1D

You estimate your belongings to be worth over \$10,000, so you purchase a \$15,000 renters insurance policy. The policy has a \$500 deductible and a premium of \$21 per month. After you have paid premiums for nine months, your classic guitar valued at \$3,400 is stolen. Because you have a replacement-cost policy, your insurance provider covers the entire \$3,400 minus your deductible.

Considering the nine months of premiums already paid and the deductible, how much did purchasing the insurance save you compared to replacing the guitar without insurance?

Buying Auto Insurance

Most people purchase their first vehicle in their late teens or early twenties. Whether the reason for doing so is to commute to school or work or just to have the freedom offered by a vehicle, it is important to carry the proper auto insurance. Many states require at least liability insurance. If you finance the car, the lender will require collision coverage as well.

EXERCISE 1E

Your car is getting old, and you already have paid off the loan. To save money, you decide to renew your auto insurance without collision and comprehensive coverage. **Figure 2** shows the annual premiums for the coverage types available for your vehicle. Your insurance provider allows you to pay the premiums in 12 equal monthly installments.

Calculate your new total annual premium. Include all coverage types except collision and comprehensive. Then calculate the monthly premium payment.

Coverage Type	Coverage Limits	Annual Premium
Bodily injury liability	\$250,000/person; \$500,000/accident	\$219.86
Property damage liability	\$100,000/accident	\$271.40
Collision	\$1,000 deductible	\$208.56
Uninsured motorist (bodily injury)	\$100,000/person; \$300,000/accident	\$53.66
Uninsured motorist (property damage)	\$25,000/accident; \$250 deductible	\$31.74
Comprehensive	\$1,000 deductible	\$55.22

Goodheart-Willcox Publisher

Figure 2 Insurance Coverages and Annual Premiums

Creating Your Budget

No matter what your situation, it is very important to create and follow a budget. Good money management cannot be achieved unless you know how much money you have and what you are doing with it. That is where a budget comes into play. A budget is a plan for saving and spending your money. At every stage in your life, you must plan how you are going to use your money before you receive it.

EXERCISE 1F

As you finish your first year of college and prepare for the next, you decide to create a budget to live by, including the summer. Begin your budget by entering tuition and books for school and other known expenses. This is shown in **Figure 3**. Because your monthly income will vary depending on the time of year, and some of your income will come from scholarships and student loans, you decide to create your new budget as an annual budget rather than a monthly budget.

Annual Budget

Income	Amount
Summer earnings	\$ _____
Earnings during school	_____
Scholarships	_____
Student loan proceeds	_____
Total Income	\$ _____

Expenses	Amount
Tuition	\$10,150.00
Books	850.00
Rent	_____
Utilities	_____
Renters insurance	_____
Phone	900.00
Auto expenses	1,768.00
Auto insurance	_____
Food	2,756.00
Clothing	360.00
Entertainment	960.00
Roth IRA	_____
Miscellaneous	_____
Total Expenses	\$ _____

Goodheart-Willcox Publisher

Figure 3 Budget Worksheet

Download the data file *Exercise 1F Budget Worksheet*. This is the budget worksheet shown in Figure 3.

- Step 1:** Using the housing expenses you calculated in Exercise 1C, enter your annual budget for rent and utilities.
- Step 2:** Using the renters insurance premium given in Exercise 1D, calculate the annual expense and enter it in the budget.
- Step 3:** Enter the annual auto insurance premium calculated in Exercise 1E.
- Step 4:** Refer to Exercise 1B to complete the income lines on the budget worksheet.
- Step 5:** You deposit 20% of your earnings from your summer and school-year jobs into a Roth IRA. This is a type of individual retirement account. Calculate this amount and enter it in the budget.
- Step 6:** Calculate your total income and expenses. Use the miscellaneous budget line to balance your budget. What is your annual budget for miscellaneous spending?

Creating a Cash Flow Statement

A budget is a plan for your money. A cash flow statement is a report of how much money actually came in and how much went out during a given period. A cash flow statement is a tool that can be used to determine if you are following your budget.

EXERCISE 1G

You were able to stay under budget on utilities by \$100 for the year, and you were able to get your books for school for \$794. You spent \$200 more on food than you budgeted, but you spent only \$280 on clothing for the year, and your miscellaneous spending totaled \$812. All other items in the budget were exactly as expected. Create a cash flow statement based on the budget you created in Exercise 1F. Divide the expenses into fixed and variable expenses.

Download the data file *Exercise 1G Cash Flow Statement*.

Step 1: Complete the cash flow statement.

Step 2: What was your net cash flow for the year?

Calculating Your Net Worth

Recall that assets are the things you own that have value, liabilities are what you owe others, and net worth is your total assets minus your total liabilities. Driving an expensive car, carrying around the newest smartphone, and living in an upscale house or condo are not measures of wealth. Net worth, on the other hand, is an important measure of wealth. It is a good idea to start tracking your net worth on an annual basis to see an accurate picture of how your wealth is growing.

EXERCISE 1H

The cash flow statement you completed in Exercise 1G is the last one for the year. You have \$1,467.84 in your checking account. You estimate your car is worth \$3,300. You have no auto loan. Every month you pay the entire balance on your credit card. Your only liability is your student loans.

Calculate your net worth.

Early Career Years

Earning a Salary

After you graduate from school, you will need to find a job to start your career. Most people begin their careers in an entry-level position. This position allows them to learn the basics of their chosen career and to demonstrate their abilities. As opportunities present themselves, they can choose to move up in position and responsibility.

EXERCISE 2A

You have graduated from college. After several interviews at different companies, you have been offered a full-time, salaried position in your career field. The job pays \$52,600 annually, and you are paid weekly. You are single and claim no dependents.

- Step 1:** Calculate the amount of gross pay per pay period. Round to the nearest cent if necessary.
- Step 2:** Using the table in Figure 1, determine the amount of federal income tax that will be withheld from your paycheck, assuming you are single and claiming the standard withholding.
- Step 3:** Calculate the amount of Social Security tax withheld from each paycheck. Use 6.2% for the Social Security tax rate. Round to the nearest cent if necessary.
- Step 4:** Calculate the amount of Medicare tax that will be withheld from each paycheck. Use 1.45% for the Medicare tax rate. Round to the nearest cent if necessary.
- Step 5:** Your state has a 3.07% flat state income tax. Calculate the amount of state income tax that will be withheld from each paycheck. Round to the nearest cent if necessary.
- Step 6:** Calculate your net pay for each paycheck.

Evaluating Benefits

Usually, full-time employment comes with benefits. As you progress in your career, new positions may offer more benefits. However, even for an entry-level position, you should consider the benefits offered by your employer. Many entry-level positions offer health insurance and some offer dental and vision insurance.

EXERCISE 2B

Your job provides health and vision insurance as part of your salary package. However, dental insurance is \$34 per month. If you choose to enroll in the dental insurance, the premium will be deducted from each paycheck. The good news is that the premiums are withheld before taxes are applied. This will lower the amount of taxes taken from each paycheck.

- Step 1:** How much in dental insurance premiums is withheld from each paycheck?
- Step 2:** Recalculate the taxes withheld and the net pay of the paycheck from Exercise 2A.
- Step 3:** How much did your federal tax withheld change by deducting the dental premiums before taxes were calculated?
- Step 4:** What was the total change in net pay?

Filing Your Tax Return

With few exceptions, everyone must file a federal income tax return each year. Many states also have an income tax and require a state income tax return to be filed each year. The amount of income tax withheld from each paycheck is an estimate of what you will owe at the end of the year. When you file an income tax return, you calculate the exact tax you owe and determine if you have to pay an additional amount or if you will receive a refund.

EXERCISE 2C

It is time to file your income tax return. You have been working for over a year in your entry-level position. **Figure 4** shows your W-2 for the previous year. Your current position does not provide a 401(k) or other pension, so you made a contribution of \$1,200 to a traditional IRA, which is an adjustment to your gross income. You also have \$3,700 in tax credits. **Figure 5** shows a federal income tax table. You are filing as a single person and decide not to itemize your deductions.

22222		a Employee's social security number 123-45-6789		OMB No. 1545-0008		
b Employer identification number (EIN) 75-1234567		1 Wages, tips, other compensation 52,600.00		2 Federal income tax withheld 4,264.00		
c Employer's name, address, and ZIP code Travis Nutrition & Fitness 123 Broadway Chester, PA 19013		3 Social security wages 52,192.00		4 Social security tax withheld 3,235.96		
		5 Medicare wages and tips 52,192.00		6 Medicare tax withheld 756.60		
		7 Social security tips		8 Allocated tips		
d Control number 123456789		9 Advance EIC payment		10 Dependent care benefits		
e Employee's first name and initial Evan Rader 567 Locust Ave. Chester, PA 19013		11 Nonqualified plans		12a		
		13 Statutory employee <input type="checkbox"/> Retirement plan <input type="checkbox"/> Third-party sick pay <input type="checkbox"/>		12b		
		14 Other		12c		
f Employee's address and ZIP code				12d		
15 State	Employer's state ID number	16 State wages, tips, etc.	17 State income tax	18 Local wages, tips, etc.	19 Local income tax	20 Locality name
PA	123-45678	52,600.00	1,602.12			

Form **W-2** Wage and Tax Statement
Copy 1—For State, City, or Local Tax Department

20XX

Department of the Treasury—Internal Revenue Service

Goodheart-Willcox Publisher, adapted from Internal Revenue Service

Figure 4 W-2 Wage and Tax Statement

If taxable income is...		And you are...			
at least:	but less than:	single:	married filing jointly:	married filing separately:	head of household:
\$5,000	\$5,050	\$503	\$503	\$503	\$503
5,050	5,100	508	508	508	508
17,400	17,450	2,189	1,764	2,189	2,006
17,450	17,500	2,196	1,771	2,196	2,014
17,500	17,550	2,204	1,779	2,204	2,021
24,300	24,350	3,224	2,799	3,224	3,041
24,350	24,400	3,231	2,806	3,231	3,049
24,400	24,450	3,239	2,814	3,239	3,056
36,800	36,850	5,331	4,674	5,331	4,916
36,850	36,900	5,344	4,681	5,344	4,924
36,900	36,950	5,356	4,689	5,356	4,931
42,200	42,250	6,681	5,484	6,681	5,726
42,250	42,300	6,694	5,491	6,694	5,734
42,300	42,350	6,706	5,499	6,706	5,741
79,600	79,650	16,031	12,156	16,330	14,674
79,650	79,700	16,044	12,169	16,344	14,686
79,700	79,750	16,056	12,181	16,358	14,699
99,800	99,850	21,568	17,206	21,986	19,724
99,850	99,900	21,582	17,219	22,000	19,736
99,900	99,950	21,596	17,231	22,014	19,749
99,950	100,000	21,610	17,244	22,028	19,761

Goodheart-Willcox Publisher

Figure 5 Tax Table

- Step 1:** Determine your adjusted gross income.
- Step 2:** Use \$14,600 as your standard deduction.
- Step 3:** Determine your taxable income.
- Step 4:** Use the table in Figure 5 to determine the tax due.
- Step 5:** Determine how much federal income tax was withheld during the year. Calculate whether additional federal income tax is due or if you will receive a refund, and the amount.

Saving for Emergencies

Having an emergency fund is always a good idea. It will allow you a reserve of money to pay for unexpected expenses such as car or house repairs or for times when you experience a temporary negative cash flow. While it is a good idea to start an emergency fund as soon as you have a part-time job, it is definitely a financially smart move to have an emergency fund once you are out of school and working full-time. A savings account can be used as an emergency fund.

EXERCISE 2D

With a full-time job, you are earning more than you ever have. You decide to begin building an emergency fund. After a few months, you have \$1,700 in a savings account. The account yields 3% annual interest compounded monthly.

If you do not put any additional deposits into the account, what will be the balance of the account in two years?

Contracting for a Cell Phone

While in college, many students have a cell phone on their family's plan. However, there are many things that you have to assume responsibility for once you are out on your own. Basic living expenses become your responsibility. This includes finding a phone contract of your own.

EXERCISE 2E

You find an offer for a smartphone contract that includes unlimited data for 2 years, for a monthly fee of \$76.99. There is a \$35 activation fee.
What is the total cost of the contract?

Managing a Credit Card

Credit cards are widely used financial tools. If used wisely, they can help you build a good credit rating. However, misused credit cards can also damage your credit rating. A good time to obtain a credit card is when you have a stable income that will allow you to wisely manage your use of the card.

EXERCISE 2F

You have a credit card with a 19.9% APR and a 30-day billing period. Your balances over the current billing period are shown below.

Days 1–4	Days 5–7	Days 8–11	Days 12–20	Days 21–26	Days 27–30
\$201.55	\$304.81	\$391.20	\$410.28	\$210.28	\$349.39

Download the data file *Exercise 2F Managing a Credit Card*.

- Step 1:** Determine your average daily balance.
Step 2: Assuming your previous balance was \$201.55 and you made a \$200 payment on day 21, what is the new balance after finance charges are applied, based on the balances in the chart? Use the unpaid balance method to compute the finance charge.

Financing a Car

Many students drive used cars that are inexpensive. Often, these cars have cosmetic or mechanical issues. While money may still be tight as you start your career, you might also take advantage of the steady income to purchase a new or newer car.

EXERCISE 2G

Since your current car has high mileage and is beginning to become unreliable, you decide to purchase a different car. You find a three-year-old pre-owned car that meets your needs and negotiate a price of \$29,100. The dealer is also giving you a \$3,100 trade-in allowance for your current car.

- Step 1:** What is the price of the car you are purchasing after the trade in?
Step 2: The sales tax of 6.5% applies only to the net price after trade in. Calculate the sales tax due.

- Step 3:** There is a license fee of \$67 and a title transfer fee of \$34. What is the total cost of the car?
- Step 4:** You have \$3,500 for a down payment. What is the amount to be financed?
- Step 5:** You obtain financing for two years at 7.9%. How much is the interest portion of the first payment?

Buying Life Insurance

Life insurance eases the burden on the people left behind when someone dies. You might be asking why someone would want to buy life insurance when they are young and just starting a career. One reason is that premiums are lower for younger people. Another reason is the desire to provide a family financial benefits in the event that the insured person dies.

EXERCISE 2H

You decide to purchase some term life insurance. You are quoted \$29.20 per month for a 10-year term policy. The policy has a \$500,000 death benefit, and you name your brother and sister as beneficiaries.

How much will you pay in total premiums during the life of the policy?

Calculating Your Net Worth

Tracking net worth on an annual basis is an important measure of wealth. This allows you to have an accurate picture of how your wealth is growing. A person's net worth may not be great while in school and during the first few years of a career. However, what is important is the year-to-year comparison. If your net worth is not increasing, then steps should be taken to identify ways to save more money or otherwise increase your net worth.

EXERCISE 2I

You began calculating your net worth when you were a student. Now that you have started a career and have been working for more than a year, it is a good time to calculate your net worth and compare it to your previous net worth. You have \$7,767.55 in your checking account, \$2,700 in your emergency savings account, and \$3,500 in your IRA. The estimated value of your car is \$28,750. You have not yet made a payment on the auto loan, so the balance on the loan is the amount originally financed, which you calculated in Exercise 2G. Your student loan balance is \$9,446.33. You have other miscellaneous assets valued at \$26,800.

Step 1: Calculate your current net worth using the information above.

Step 2: Calculate the increase or decrease in net worth from your previously calculated net worth.

Earning Years

Earning Commission

There are various ways to be compensated for the work you do. Many professionals receive an annual salary, but others are paid an hourly wage. Some professionals receive an annual salary plus a bonus based on performance. The bonus may be a flat payment based on goals that are met. However, especially in sales positions, the bonus may be a commission paid based on the level of sales achieved.

EXERCISE 3A

Your company has been restructured and now your compensation will be salary plus commission. You will earn a 2% commission on the first \$100,000 in sales that you make each month and 4% on sales over \$100,000 each month. **Figure 6** shows your total sales for March, April, and May.

Month	Total Sales for the Month
March	\$87,034
April	\$111,788
May	\$202,522

Goodheart-Willcox Publisher

Figure 6 Sales by Month

- Step 1:** Using Figure 6, identify your sales figures for each of the first three months after the company restructuring.
- Step 2:** Calculate your commission for each month.

Calculating Capital Gains

Capital gains are profits that result from selling items for more than you paid for them. This is one of the ways money can be made with stocks and mutual funds. When the stock is sold, the difference between the sale price and the purchase price is the capital gain or loss.

EXERCISE 3B

A few years ago, you began purchasing shares in a mutual fund as part of a balanced approach to investing. You are considering buying a home soon and are thinking about selling the mutual fund shares to use as a down payment on the house. When you purchased the mutual fund shares, you invested \$7,400. If you sell the shares today, you will receive \$8,954.41 for them.

- Step 1:** What is the capital gain on the investment?
- Step 2:** You estimate the capital gains tax rate to be 15%. How much tax will you owe?

Buying a House

Purchasing a house or condo can be a good way to help build wealth. If you purchase wisely, you can increase your net worth. There are other advantages as well, such as being able to use the mortgage interest and property taxes as deductions on your annual income tax return. Many people choose to purchase their first house or condo after they have established a stable career.

EXERCISE 3C

You are ready to buy a house. You have found a house for \$234,000 that you would like to purchase. Because you are a first-time home buyer, you qualify for a loan with a 3.5% down payment. The closing costs are \$10,412.58, which are in addition to the down payment.

1. How much will the required down payment be?
2. What is the total of the required down payment plus closing costs?
3. You will use all the money from the sale of shares in your mutual fund in Exercise 3B, minus the capital gains tax. How much additional cash is required, or will you be able to have a larger-than-required down payment?
4. How much will you finance through a mortgage?

Comparing Mortgage Terms

There are several options for the length of a mortgage. Most people obtain 15-, 20-, or 30-year mortgages. Often, a shorter-length mortgage offers a lower interest rate. However, the monthly payment will be more for a shorter-length mortgage because the loan amount is repaid over fewer payments.

EXERCISE 3D

In considering your options for mortgage length, you have decided that you can afford a loan payment of no more than \$1,700 per month, not including escrow for taxes and insurance. Your interest rate would be 5% for a 15-year mortgage and 5.5% for a 20- or 30-year mortgage. **Figure 7** shows the monthly payment required for various mortgage rates.

Monthly Payment per \$1,000 of Loan Amortization

Interest Rate	15 years	20 years	30 years
2.5%	\$6.67	\$5.30	\$3.95
3.0%	6.91	5.55	4.22
3.5%	7.15	5.80	4.49
4%	7.40	6.06	4.78
4.5%	7.65	6.34	5.08
5%	7.91	6.60	5.37
5.5%	8.18	6.88	5.68
6%	8.44	7.17	6.00
6.5%	8.72	7.46	6.32
7%	8.99	7.76	6.66
7.5%	9.28	8.06	7.00
8%	9.56	8.37	7.34
8.5%	9.85	8.68	7.69
9%	10.15	9.00	8.05
9.5%	10.45	9.33	8.41
10%	10.75	9.66	8.78
10.5%	11.06	9.99	9.15

Goodheart-Willcox Publisher

Figure 7 Monthly Payment per \$1,000 of Loan Amortization

Use the table to answer the following questions.

1. What would be your monthly payment for 15-, 20-, and 30-year mortgages?
2. Which is the shortest mortgage term that you can afford in your budget?
3. What is the amount of the first month's interest payment for each mortgage?
4. How much money would be applied to the principal in the first month's payment for each mortgage?

Calculating Debt-to-Income Ratio

While net worth can show how your wealth is growing from year to year, your debt-to-income ratio shows how your debt load compares to your income. In a way, it shows you how well you are living within your means. Most financial experts recommend a debt-to-income ratio of 36% or less.

EXERCISE 3E

Including all sources of income, you now average \$5,900 per month in income. You have a \$412 monthly car payment and student loan payments of \$214 per month. You pay your credit card balance in full each month, and each month you average a balance of \$358. Your only other debt is your newly acquired mortgage from Exercise 3D. You selected the shortest mortgage term that you can afford in your budget.

What is your debt-to-income ratio, and is it less than what is recommended by financial experts?

Calculating Property Tax

Along with homeownership comes property tax. The total amount of property tax paid is usually a combination of taxes from several jurisdictions. For example, part of the total may be tax for the fire protection district in which the house is located. Part of the total may be tax for the local school district. A rate is used for each jurisdiction, and the resulting dollar amounts are summed to calculate the total property tax.

EXERCISE 3F

Your property tax is collected as part of your monthly mortgage payment and held in escrow. However, you should keep track of the tax you are paying and compare this to the escrow statement from your mortgage lender. The table in **Figure 8** shows the four tax jurisdictions that you are responsible for and the rates used to calculate the property tax for the current year.

Taxing Jurisdiction	Assessed Value	Tax Rate (%)
Lubbock County	\$182,400	0.330343
Hospital District	182,400	0.120720
Shallowater ISD	182,400	0.600000
Hi Plains Water District	182,400	0.007850

Goodheart-Willcox Publisher

Figure 8 Tax Jurisdictions for Property Taxes

Based on the table in Figure 8, what is the total property tax due for the year?

Investing

Investing is the key to building wealth for the future. While the earning years are when wealth is built for later in life, it is never too soon to start investing. There are many types of investments, and investments can be used for short- or long-term goals. It is important to invest wisely to grow your wealth and meet your financial goals.

EXERCISE 3G

The past few months, you have earned more in commissions than your average. You decide to invest the extra money. To diversify the investments, you decide to invest in a corporate bond and a mutual fund. The bond you purchase for \$3,000 is a five-year corporate bond at an annual interest rate of 4.1%. The mutual fund is a no-load mutual fund of small cap stocks with an NAV of \$9.33452. You decide to purchase 250 shares of the mutual fund.

1. How much interest will you receive on the bond over the five years?
2. What is the total cost of the mutual fund investment?

Creating a Monthly Budget

At every stage of life, you should create and follow a budget. Following a budget is key to good money management. As most people progress through a career and life, they take on more expenses and earn more income. Planning how to use income before receiving it allows people to live within their means.

EXERCISE 3H

Since most of your expenses are monthly, you decide to create a monthly budget rather than an annual budget. This will require calculating the monthly cost of any annual expenses. Also, since your income is an annual figure plus a monthly commission, you will need to calculate your average monthly income.

Download the data file *Exercise 3H Budget Worksheet*. This budget worksheet is shown in **Figure 9**. Complete the budget worksheet using the information below.

Annual Budget

Income	Amount
Average monthly income	\$ _____
Total Income	\$ _____
Expenses	Amount
Mortgage	\$ _____
Loans and credit cards	_____
Utilities	121.65
Auto expenses	189.15
Auto insurance	208.33
Homeowners insurance	66.67
Food	_____
Clothing	55.00
Phone	_____
Entertainment	150.00
Property tax	_____
Investments	_____
Roth IRA	_____
CDs/Savings account	_____
Miscellaneous	_____
Total Expenses	\$ _____

Goodheart-Willcox Publisher

Figure 9 Budget Worksheet

- Step 1:** You accepted the job offer for a higher salary and are also earning commission. Using the average monthly income total from Exercise 3E, enter your monthly income.
- Step 2:** When you purchased your house, you budgeted an amount and decided to take the shortest loan term that was within that budget. Using the calculated payment from Exercise 3D, enter the monthly mortgage payment.
- Step 3:** Using the information from Exercise 3E, enter your monthly payments for car loan, student loans, and average monthly credit card balance that you pay in full.
- Step 4:** Your family averages \$210 per week in groceries. Assuming an average of four weeks per month, enter the monthly average into your budget.
- Step 5:** You are still under the phone contract from 2E. Using this information, enter your monthly phone payment.
- Step 6:** Using the annual property tax calculated in 3F, calculate the monthly amount for property tax and enter it.
- Step 7:** Using the information on investments from 3G, round to the nearest one hundred dollars. Assume you will invest this amount every year. Enter your monthly investment into your budget.
- Step 8:** You contribute \$5,000 to your Roth IRA each year and make monthly contributions. Enter your monthly Roth IRA contribution.
- Step 9:** You save \$350 each month between CDs and a savings account. Enter this amount into your budget.
- Step 10:** Calculate your total income and expenses. Use the miscellaneous budget line to balance your budget. What is the monthly budget for miscellaneous spending?

Creating a Cash Flow Statement

A cash flow statement can be used to see if you are following your budget. It shows your cash inflows and outflows over a specific time period. Completing a cash flow statement and comparing it to your budget can help you see if your budget is realistic and if you are able to stick to it.

EXERCISE 3I

Create a cash flow statement for the current month based on the budget you created in Exercise 3H. Divide the expenses into fixed and variable expenses. You were thrifty this month and reduced your credit card bill by \$247. Utilities were \$5.07 more than average, and you spent \$35 more on gas. This month, your family averaged \$227 per week for food, and you spent \$105.34 on clothing. You splurged on entertainment this month, spending \$198. All other items in the budget were exactly as expected.

Download the data file *Exercise 3I Cash Flow Statement*.

- Step 1:** Complete the cash flow statement.
- Step 2:** What was your net cash flow for the month?

Calculating Your Net Worth

A person's earning years are when wealth is built. Over these years is when a year-to-year comparison of net worth becomes critical. Net worth should increase each year. The next stage in life after the earning years is retirement. Building wealth by increasing net worth each year is important to a secure retirement.

EXERCISE 3J

You were financially smart and began calculating your net worth when you were a student. You continued calculating your net worth on an annual basis as you started and progressed through a career. You have been working in your career for 12 years. Your assets and liabilities are shown in **Figure 10**.

Assets and Liabilities	Amount
Estimated house value	\$205,375.00
Estimated car value	\$14,350.00
Checking account balance	\$4,061.49
CDs/Savings account	\$46,571.84
Roth IRA	\$79,687.12
Car loan balance	\$17,902.16
Student loan balance	\$302.05
Mortgage balance	\$169,957.48
Other miscellaneous assets	\$56,845.00

Goodheart-Willcox Publisher

Figure 10 Assets and Liabilities

Step 1: Calculate your current net worth using the information shown in Figure 10.

Step 2: Calculate the increase or decrease in net worth from your previously calculated net worth in Exercise 2I.

Retirement Years

Paying Off the Mortgage

One path leading to a financially sound retirement is reducing or eliminating debt. A house is usually the largest debt a person will take on. Paying off a mortgage before retiring can be a big step toward financial security in retirement.

EXERCISE 4A

After many years of hard work, you have decided to retire. You are close to paying off your mortgage, but you still have about a year left on the loan. **Figure 11** shows the remaining payments on your mortgage amortization schedule. To eliminate this debt, you decide to pay off the mortgage early.

Month	Payment	Principal	Interest	Balance
July	\$1,672.47	\$1,627.21	\$45.26	\$8,201.69
August	1,672.47	1,634.88	37.59	6,529.22
September	1,672.47	1,642.54	29.93	4,856.75
October	1,672.47	1,650.21	22.26	3,184.28
November	1,672.47	1,657.88	14.59	1,511.81
December	1,518.74	1,511.81	6.93	0.00

Goodheart-Willcox Publisher

Figure 11 Partial Mortgage Amortization Schedule

You decide to pay off the mortgage in August.

Based on the information in the amortization table in Figure 11, what is the final payment to pay off the mortgage?

Purchasing Revenue-Generating Real Estate

While reducing or eliminating debt is important, generating revenue during retirement is another way to ensure a financially successful retirement. One way to generate revenue is to purchase real estate and rent it out. There are, of course, downsides to owning rental property. But, for some people, owning rental property can help offset some debts in retirement that cannot be eliminated.

EXERCISE 4B

With the mortgage on your house now paid off, you decide to invest in a house as rental property to generate some income. The house you select has a mortgage payment of \$1,230 per month and an annual insurance cost of \$1,866, property taxes of \$3,180, and an estimated \$1,700 in maintenance per year. You estimate that the house will rent for \$2,125 per month.

How much annual income can you expect from the real estate investment?

Determining the Effect of Inflation on Savings

Inflation is an ever-present concern. One dollar today will buy more than one dollar will in ten years. Thinking of this in terms of retirement savings, one million dollars in the bank today is a lot of money, but in fifty years it may not be enough to live on in retirement. Fifty years ago, somebody who had \$100,000 saved was probably considered a very wealthy individual. Today, it is not uncommon for household income to be greater than \$100,000.

EXERCISE 4C

In the last 12 months, the value of your retirement account grew by 8.45%. The rate of inflation during those same 12 months was 2.91%.

What was the actual rate of growth, as a percentage, of the value of your retirement account during the period when you account for inflation?

Adjusting Insurance Needs

As a person progresses through life, insurance premiums change. For example, older drivers typically have lower auto insurance premiums than younger drivers. Premiums for health care and life insurance increase as a person gets older. On the other hand, insurance needs also change. For example, when children are no longer dependent on parents for financial stability, the life insurance needs of the parents may be lower.

EXERCISE 4D

You decide that a \$250,000 life insurance policy is enough for your needs at this stage of life. Because you do not know what might happen with your health over the coming years, you decide to secure a 20-year term life policy with level monthly premiums. The monthly premium you are quoted is \$272.30 per month.

What is the total cost of the 20-year term life insurance policy?

Creating Your Budget

Even after retiring from work, a budget should be used. In fact, many people feel that a budget is even more important in retirement than when working. This is because most people must live on a fixed or limited income in retirement. So, any missteps in money management may mean running out of money.

EXERCISE 4E

Most of your expenses are still monthly, and you receive monthly Social Security payments and withdrawals from your Roth IRA. You decide to stick with a monthly budget. A portion of your income and expenses is shown in **Figure 12**.

Income and Expenses	Amount
Social Security benefit	\$1,967 per month
Roth IRA withdrawal	4% annual withdrawal taken monthly; current value \$967,718.23
Medicare supplemental insurance	\$232.88 per month
Auto insurance	\$1,084.36 per year
Food	\$105 per week
Long-term care insurance	\$4,150.34 per year

Goodheart-Willcox Publisher

Figure 12 Partial Income and Expenses

Download the data file *Exercise 4E Budget Worksheet*. Complete the budget worksheet using the information below.

Step 1: Enter your monthly Social Security benefit into your budget.

Step 2: Calculate the annual withdrawal from your Roth IRA; then determine how much you will withdraw each month and enter that amount into your budget.

- Step 3:** Enter the monthly income from the rental house in Exercise 4B into your budget.
- Step 4:** Enter the monthly expenses for the rental house into your budget. Include mortgage, homeowners insurance, property taxes, and maintenance costs.
- Step 5:** Enter the monthly premium for Medicare supplemental insurance into your budget.
- Step 6:** Calculate the monthly premium for long-term care insurance and enter that amount into your budget.
- Step 7:** Calculate the monthly premium for auto insurance and enter that amount into your budget.
- Step 8:** Assuming an average of four weeks per month, calculate the monthly cost of food and enter that into your budget.
- Step 9:** Adjust the withdrawal from your Roth IRA to balance the budget and have a net income of \$0.00. What does the withdrawal amount need to be to balance the budget?

Creating a Cash Flow Statement

A cash flow statement should always be used to see if you are following your budget. However, it becomes even more important in retirement when you need to make your savings last for the rest of your life.

EXERCISE 4F

Create a cash flow statement for the current month based on the budget you created in Exercise 4E. Divide the expenses into fixed and variable expenses. Your credit card bill was \$142.58 less than average. Utilities were \$12.73 more than average, and you spent \$17 more on gas. This month, your family averaged \$98.47 per week for food, and you spent \$32.98 on clothing and \$108.75 on entertainment this month. You kept the adjusted Roth IRA withdrawal amount you calculated in Exercise 4H. All other items in the budget were exactly as expected.

Download the data file *Exercise 4F Cash Flow Statement*.

- Step 1:** Complete the cash flow statement.
- Step 2:** What was your net cash flow for the month? How do you explain the result?

Calculating Your Net Worth

During retirement years, most people see a decline in net worth from year to year. This happens because income is limited, and most people begin drawing from their retirement savings. However, some people see their net worth increase during their retirement years.

EXERCISE 4G

You retired four years ago. You were financially smart during your career, and you continue to be so in retirement. Your assets and liabilities are shown in **Figure 13**.

Assets and Liabilities	Amount
Estimated house value, home	\$273,125.00
Estimated house value, rental	\$135,100.00
Estimated car value	\$5,350.00
Checking account balance	\$2,127.06
CDs/Savings account	\$78,527.68
Car loan balance	\$17,902.16
Roth IRA	\$1,224,998.90
Mortgage balance, rental	\$132,854.27
Other miscellaneous assets	\$61,627.00

Goodheart-Willcox Publisher

Figure 13 Assets and Liabilities

Step 1: Calculate your current net worth using the information shown in Figure 13.

Step 2: Calculate the increase or decrease in net worth from your most recently calculated net worth from Exercise 3J.

Summative Exercise

In this summative exercise, you will work through the financial aspects of four stages of life. You will need to come up with your own realistic values for wages, expenses, investments, and living costs. Be prepared to defend your decisions.

Download the profile worksheet data file *Summative Exercise Life Stage Profile*. For each section in the summative exercise, you must complete a life-stage profile worksheet and submit it to your instructor for approval. Once your instructor has approved your profile, you may complete the corresponding section. Once you have finished a section, complete a profile worksheet for the next section.

Student Years

In this life stage, you must consider working part-time, using a bank account, paying for school, sharing living expenses, securing renters insurance, buying auto insurance, creating your budget, creating a cash flow statement, and calculating your net worth. Download the data files *Summative Exercise Budget Worksheet*, *Summative Exercise Cash Flow Statement*, and *Summative Exercise Net Worth Worksheet*. Complete the budget, cash flow statement, and net worth calculation.

Early Career Years

In this life stage, you must consider earning a salary, evaluating benefits, filing your tax return, saving for emergencies, contracting for a mobile phone, managing a credit card, financing a car, buying life insurance, and calculating your net worth. Download the data files *Summative Exercise Budget Worksheet*, *Summative Exercise Cash Flow Statement*, and *Summative Exercise Net Worth Worksheet*. Complete the budget, cash flow statement, and net worth calculation.

Earning Years

In this life stage, you must consider comparing jobs, earning commission, calculating capital gains, buying a house, comparing mortgage terms, calculating debt-to-income ratio, calculating property tax, investing, creating your budget, creating a cash flow statement, and calculating your net worth. Download the data files *Summative Exercise Budget Worksheet*, *Summative Exercise Cash Flow Statement*, and *Summative Exercise Net Worth Worksheet*. Complete the budget, cash flow statement, and net worth calculation.

Retirement Years

In this life stage, you must consider paying off a mortgage, purchasing revenue-generating real estate, determining the effect of inflation on savings, adjusting insurance needs, saving for grandchildren's college, evaluating opportunity cost, receiving inheritance, creating your budget, creating a cash flow statement, and calculating your net worth. Download the data files *Summative Exercise Budget Worksheet*, *Summative Exercise Cash Flow Statement*, and *Summative Exercise Net Worth Worksheet*. Complete the budget, cash flow statement, and net worth calculation.