

CONSUMER MATH



**Biblical Stewardship
& Personal Finance**



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Table of Contents

Quarter 1: The Big Picture & Key Skills

Lesson 1: Introduction & Giving

The Big Picture	11
Skill Review: Addition & Subtraction, Plus Abbreviations for Time	13
Skill Review: Multiplication & Division	15
Income Distribution Equation	17
Skill Review: Rounding & Percent	19
Giving & Calculating a Percent of a Value	21
Percentage Given	23
The Methods & Heart of Giving	25
Review & Case Study	27

Lesson 2: Introduction to Living Expenses

Living Expenses = Lifestyle Choice (Needs or Wants)	29
Mental Math: Introduction and Addition & Subtraction	31
Lifestyle Choice & Unit Price	33
Mental Math: Multiplication & Division	35
Skill Review: Percent Off & Mental Math: Finding Half	37
Mental Percent Problems	39
Subscriptions	41
Utility Bills	43
Review	45

Lesson 3: Savings, Compound Interest, & Debt

The Importance of Saving	47
Understanding Interest	49
Skill Review: Order of Operations/Parentheses, Plus Compound Interest Formula	51
More with Calculating Compound Interest	53
The Dangers of Debt	55
Credit Cards & Credit Card Debt	57
Home Debt	59
Credit Scores	61
Review & Spiritual Debt	63

Lesson 4: Taxes

Flat Tax (Sales, Social Security, & Medicare)	65
Progressive Tax	67
Different Incomes on Federal Taxes	69
Filing Status	71
Deductions	73
Tax Tables	75
Deductions and Credits	77
Total Due or Refund	79
Review	81

Lesson 5: More Taxes & Review

Effective & Marginal Tax Rates	83
Compiling Income	85
State Income Tax	89
Review	91

Quarter 2: Budgeting

Lesson 6: Getting Started with a Budget

Introducing Budgets	95
Skill Introduction: Spreadsheets	97
Understanding a Budget Plus Gross & Net Income	99
Estimating Fixed vs. Variable Budget Categories	101
More Spreadsheets & Using a Budget	103
Evaluating a Budget	105
Evaluating a Budget: Tools	107
Your First Budget	109
Review	111

Lesson 7: More on Budgeting Income; Limiting Lifestyle (Food)

Estimating Income: Biweekly & Bimonthly; Non-Monthly Budgets	113
Estimating Income: Hourly Jobs	115
Estimating Income: Self-Employed & Commission	117
Lifestyle Choice Review: Food Cost	119
Eating Out vs. In Plus a Look at Meal Delivery Services	121
Meal Planning & Estimating	123
Dish, Brand, & Effort Choices	125
Sales & Stocking Up	127
Review & Case Study	129

Lesson 8: Budgeting & Medical Expenses

Medical Expenses	131
Insurance, Sharing, & Discount Plans	133
Understanding Terms (Deductibles, Coinsurance, & More).	135
Accessibility, Coverage, & Types of Insurances	137
Health Savings Account (HSA) & Flexible Spending Account (FSA)	139
Supplemental & Disability Insurance	141
Budgeting Medical	143
Comparing Policies	145
Review	147

Lesson 9: Budgeting for Big Expenses

Saving for Big Expenses & Skill Sharpening: Units of Distance, Unit Conversion, & Months to Years	149
The Saving Process	151
Budgeting for Events & Trips.	153
Skill Sharpening: Square & Cubic Units, Plus More Unit Conversion	155
Skill Sharpening: Converting Square & Cubic Units, Problem Solving & Circles.	157
Skill Sharpening: Scale Drawings	159
Savings vs. Debt, Budgeting Savings, & Skill Sharpening: Drawing Circles	161
Hiring Home Improvement & a Note About Scraps	163
Review & Case Study	165

Lesson 10: Review

Prudent Saving vs. Mere Wealth Accumulation	167
Total Abandonment & Mental Sales Tax	169
God’s Heart for the Poor.	171
Review & Case Study	173

Quarter 3: Financial Decisions

Lesson 11: Cars

Transportation Options & Payment Plan.	177
Depreciation & Brand-New Cars	179
Cost Per Mile, Used Cars, & Leasing	181
Car Maintenance Costs	183
Gas Mileage	185
Car Insurance	187
Total Cost of a Car (Including Hidden Fees).	189
Making a Fair Deal	191
Review & Case Study	193

Lesson 12: Career Preparation

The Importance of Thinking Through Your End Goals, Plus a Biblical View of Work	195
College: Overview of Costs & Tuition Plus Credits	197
College: Ways to Save	199
College: Financial Aid	201
Apprenticeships, Certificates, Trade School, & Other Non-College Options	203
Comparing Jobs: Benefits	205
Comparing Jobs: Total Compensation & Cost of Living	207
Self-Employment Income	209
Review & Case Study	211

Lesson 13: Housing, Part 1

Comparing Rentals	213
Sharing Rent & Saving to Buy	215
Affording Housing	217
Home Mortgages & Owner's Equity	219
Getting Qualified & Approved for a Loan	221
Types of Mortgages & Mortgage Insurance	223
Points & Lender Credits	225
Renting vs. Buying & Interest Rates	227
Review & Case Study	229

Lesson 14: Housing, Part 2

Realtors & Housing Terms	231
Closing Costs	233
Costs of Location & Fixer Uppers	235
Costs of New Homes vs. Resale	237
Homeowner's Insurance	239
Home Maintenance	241
Evaluating Total Costs & Affordability	243
Extra Payments & Refinancing	245
Review & Case Study	247

Lesson 15: Decisions & Review

Decision Introduction & Case Study	249
Umbrella Policy & Case Study	251
Struggles & Case Study	253
Skill Sharpening: More with Negative Numbers & Graphs & Case Study	255

Quarter 4: More Applications, Investments, & Final Review

Lesson 16: Applying Math Skills to Daily Life

Doubling or Halving a Recipe Plus Skill Review: Mixed Numbers	259
Changing Pan Sizes	261
Substituting Measurers & Familiarity with Common Measurements	263
Unit Conversion: Review & Shopping	265
Unit Conversion: Metric Measurements	267
Unit Conversion: Currency	269
Unit Conversion: Temperature & Other Conversions	271
Health & Nutrition	273
Review & Case Study	275

Lesson 17: Savings: Understanding Saving Options

Key Investment Concepts	277
Supply & Demand	279
Variable Investments with Positive ROI (Savings Accounts)	281
Variable Investments with Positive or Negative ROI (Stocks)	283
Fixed Income Investments (Certificate of Deposits / CDs)	285
Fixed Income Investments (Bonds Plus More on CDs)	287
Diversification	289
More Variable Investments with Positive or Negative ROI (Assets & Direct Investments)	291
Review & Investing in Eternity	293

Lesson 18: Savings: Mechanics & Retirement

Investing Mechanics	295
Annualized ROIs & Rule of 72	297
Mechanics of Checking Accounts	299
Checking Your Checking Account	301
IRAs & 401ks	303
Saving Enough Plus Inflation Basics	305
Life & Long-Term Care Insurance	307
Other Long-Term Saving Tools & Financial Preparations	309
Review	311

Lesson 19: Estimating Taxes, Business Math, & Review

Estimating Taxes	313
Walking Through the W-4 Form	315
Checking the W-4 Form	317
Income Statement: Revenue, Expenses, & Profit (or Income)	319
Business Budgeting	321
Balance Sheet: Equity, Assets, & Liabilities	323
Self-Employment Taxes & Starting a Business	325
Gambling	327
Review & Business Can Be a Blessing	329

Lesson 20: Review

Quarter Review & Case Study	331
Two Masters	333
Begin Now & Case Study	335
Reference Section	337
Index	349

Welcome to Consumer Math!

This course is designed to equip you with essential skills to handle personal finances wisely. From budgeting for groceries to preparing for larger purchases like a car or home, this course connects math principles to real-life financial situations.

This course not only focuses on the practical aspects of financial management but also integrates a biblical perspective on stewardship. You will see how principles from Scripture can inform wise financial decisions, promoting generosity and responsible living. Engaging activities, case studies, and discussions will help solidify your understanding and make the learning experience both meaningful and enjoyable.

By course end, you will be ready to navigate financial decisions confidently, blending practical skills with a strong foundation in stewardship and responsibility.

Now we will embark on this journey towards becoming wise stewards of what God gives us.

Acknowledgments: A heartfelt thank you to all those who contributed to this course, including my mom, Cris Loop, who faithfully read drafts of the material; my family, who sacrificed to give me time to work on this; my friends who prayed with me through the process; the many men and women who have grappled with what the Bible says about money whose work helped me forward; and the incredible team at Master Books, who saw vision for this project and polished it into what it is today.

Quarter 1: The Big Picture & Key Skills

Welcome to *Consumer Math*. In this first quarter, we are going to look at the big picture of managing money.

In these first several lessons, we are going to be reviewing a lot of skills that you hopefully already know. They are skills that help with a lot of consumer math decisions, however, so are very important. As the course continues, we will move into much more application, applying those skills to everything from taxes to budgeting to choosing a career.



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Introduction & Giving

In this lesson, we will take a look at what consumer math is and at the biblical foundation for it. We will review some key skills we will need as we continue. We will see how money we get can either be given, saved, or spent. We will also explore God's heart for giving and review working with percent problems, which is a very useful skill we will use over and over again.



The Big Picture

We will begin by looking at what we are studying, what God has to say about it, and why consumer math is so important.

What Is Consumer Math?

Consumer = “a person who purchases goods and services for personal use.”¹

Consumer math is technically the math needed to make personal purchases, whether those be large purchases like a house or small ones like which type of spaghetti sauce to buy. We will broaden the term to include a big picture of all aspects of personal finances, including:

- ▲ income
- ▲ spending
- ▲ saving
- ▲ budgeting
- ▲ giving
- ▲ taxes

We are also going to focus throughout on God's principles for money.

What Does God Have to Say About Finance?

God has given us “all things that pertain to life and godliness” (2 Peter 1:3). His Word, the Bible, can equip us for every good work.

All Scripture is breathed out by God and profitable for teaching, for reproof, for correction, and for training in righteousness, that the man of God may be complete, equipped for every good work (2 Timothy 3:16–17).

The Bible can guide us in every area of life, including finances. God has a lot to tell us about money — and I mean a lot. One man compiled 2,350 verses that deal with money in one way or another.² We will examine some key principles from God's Word to govern how we view and use money, starting today with two of them.



Principle #1: Everything Is God's.

Animals, people, money, and abilities — they all come from God and belong to Him.



The earth is the LORD's and the fullness thereof, the world and those who dwell therein (Psalm 24:1).

While the Bible shows people setting aside money specifically for God's work, that does not mean that the other amount is ours to do whatever we want with. God rules over *all*.

In this course, we will use the word **steward** to convey the idea that we are really just managers of what God has given to us — His servant, overseeing His resources.

Principle #2: Loving Money Produces Slavery.

For the love of money is a root of all kinds of evils (1 Timothy 6:10a).

Notice this verse does not say money itself is evil. But loving money is. God commands us to love *Him* with all our “heart and with all [our] soul and with all [our] mind” (Matthew 22:37).

The Bible is very clear: we can not serve both God and money.

You cannot serve God and money (Matthew 6:24b).

If money holds our heart, God does not. The moment we start living for things here and now, we have stopped living as God's servant. Living for money (and what it can buy) does not truly satisfy. When we die, we can not take any of it with us. We were made to know our Creator.

- Money can easily become our master and put us in slavery to temporary things.
- Money can be one of God's many blessings when viewed appropriately and utilized like God intended.

Why Study Consumer Math?

Throughout your life, you are going to face a myriad of decisions, from how to spend money you are given for your birthday to which career, car, or house to choose. This course will help prepare you for financial decisions as you grow.

**KEEPING
PERSPECTIVE** →

Whether or not you like math, I hope you are excited about this course. It is my prayer that this will be a fascinating journey for you — and one that causes you to dig deeper into God's Word and seek Him for how to live as He desires.

Skill Review: Addition & Subtraction, Plus Abbreviations for Time

One great part about consumer math is that you do not need to be a math whiz to grasp it. The key is knowing when to use what operation. Here is a quick review of when to use addition and subtraction, as we will add and subtract throughout the course.

Addition

Addition shows us the result when we *combine* different values; it gives a *total* or a *sum*.

Example: If you buy items that cost \$4.50, \$6.79, and \$3.99, what is the total?

We can calculate this with addition.

$$\$4.50 + \$6.79 + \$3.99 = \$15.28$$

Subtraction

Subtraction *takes away*; it shows what we have left after we *remove* some amount.

Example: If a service costs \$49.99 and they offer a \$10 discount, what is the new total?

Do not let the word total fool you. We have an amount, and we are *removing*, or *taking away*, the discount. This is subtraction.

$$\$49.99 - \$10 = \$39.99$$

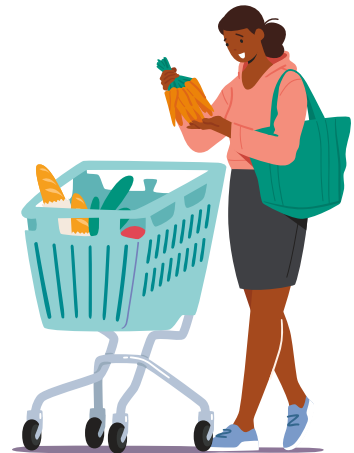
While a total can refer to the result of addition, in finance, the word *total* often just means the final owed/due, regardless of how it was obtained. **Do not assume just because you see that word that you need to use addition; think through what you are trying to do.**

We can also think of subtraction as showing us the *difference* between two values and helping us *compare* them.

Example: One item costs \$4.99 and another \$5.99. How much more is the second item?

We are looking here for the *difference* between the items. We calculate this using subtraction. After all, if we took away one amount from the other, it shows the *difference* between the two.

$$\$5.99 - \$4.99 = \$1$$





Time Abbreviations & Relationships

Make sure you know these relationships between units of time and their abbreviations, as we will be using them throughout this course.

8 hours (hrs.) = 1 typical workday

5 days (ds.) = 1 typical workweek

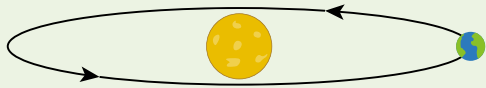
12 months (mos.) = 4 quarters (qtrs.) = 52 weeks (wks.)
= 1 year (yr.) \approx 365 days (ds.)

1 quarter (qtr.) = 3 months (mos.)

\approx 4.33 weeks (wks.) = 1 month (mo.)

(calculated by taking $52 \div 12 \approx 4.33$, as there are 52 wks. in a yr.)

\approx means approximately equal



An actual year is 365.25 days because it takes a little longer for the earth to circle the sun. For the sake of ease, though, it is common to round to 360 or 365 in financial uses. We will round to 365 in this course.

KEEPING PERSPECTIVE

Your exercises will help you practice recognizing which operation to use. You will get more practice as we continue through this course because we will be using these operations over and over.

Have you ever wondered *why* addition and subtraction work? God's Word gives us an answer: It teaches us that God established and sustained "fixed laws" in creation. He is holding all things together in a consistent and predictable fashion — predictable enough for us to rely on $2 + 2$ equaling 4. Math's ability to work is a testimony to us of God's never-changing nature and faithfulness.

Thus says the LORD: "If I have not established my covenant with day and night and the fixed order of heaven and earth, then I will reject the offspring of Jacob and David my servant ..." (Jeremiah 33:25–26).

I have written this course with the desire to help you serve God by using money wisely without becoming a slave to it. But all the best money management and stewardship is pointless if you do not first have a relationship with God.

- Jesus said to love God "with all your heart ... soul ... and mind" (Matthew 22:37). We are all guilty of loving things in this world more than God at times, whether that is wealth, getting our own way, or being jealous of what other people have. We are all guilty of sin — of falling short of God's commands. This sin earns us eternal separation from God in hell.
- Jesus paid the penalty with death on the Cross "... for the wages of sin is death" (Romans 6:23). When we accept what Jesus did for us, God will make us new and restore our relationship with Him.

If you have not yet humbled yourself before God and received the gift of eternal life in Christ Jesus, I hope you will consider responding today to what Jesus has done.

Skill Review: Multiplication & Division

Now we will keep reviewing how to identify which basic math operation to use.

We are putting a lot of skill review at the beginning of this course to make sure you have all the math you need as we delve into other topics.

Multiplication

Multiplication is a quick way of *adding* the same amount repeatedly.

Example: If you spend \$5.99 a month on a service, what is the cost per year?

Since there are 12 months in a year, rather than adding \$5.99 12 times, we can simply multiply $12 \times \$5.99$.

$$12 \times \$5.99 = \$71.88$$

Example: If you earn \$200 a week at a job, how much will you make in a year?

Since there are 52 weeks in a year, we need to multiply 52 by \$200 to discover the yearly amount.

$$52 \times \$200 = \$10,400$$

Division

Division can be thought of as breaking apart, or *separating*, an amount into piles. In most consumer math applications, those piles are hypothetical piles — breaking a cost down into how much something is *per* month, ounce, or some other unit of measure.

Example: If I spend \$498 every 6 months on auto insurance, how much is it costing me *per* month?

We can discover the answer by division. We want to take that \$498 and hypothetically *separate* it into 6 piles — one for each month. That will tell us how much it is costing each month.

$$\$498 \div 6 = \$83$$

Fractions as Division

It can be helpful to represent division using a fraction line. The previous example could be written as $\frac{\$498}{6}$. It can be helpful to read a fraction line as *divided by* or *per*. $\frac{\$498}{6}$ can be read as “\$498 divided by 6” or “\$498 per 6 [months].”



Note that we could also think of division as repeated subtraction, in that if we were to subtract \$83 from \$498 over and over, we would subtract it 6 times altogether.

God gave mankind the ability to develop different ways to represent the same thing. There is more than one way to show division. Not only are fraction lines easier to write, but when using algebra or advanced math, they become indispensable. Because of this, **we will be mainly using fractions to show division.**

Multiplication and Division by 10 & Powers of 10

To multiply by 10 or a power of 10, move the decimal point to the *right* the same number of 0s as in the 10, 100, and so forth.

$$10 \times 5 = 50 \quad (\text{decimal point moved to the right 1 place, as 1 zero in 10})$$

$$100 \times 5 = 500 \quad (\text{decimal point moved to the right 2 places, as 2 zeros in 100})$$

100 is really 10×10 , so moving the decimal point to the right 2 times, 1 time for each multiplication by 10, makes sense.

To divide or multiply by $\frac{1}{10}$, $\frac{1}{100}$, and so forth, move the decimal point to the *left* the same number of 0s as in the 10, 100, and so forth.

$$50 \div 10 = \frac{50}{10} = 5.0 = 5 \text{ or } 50 \times \frac{1}{10} = 5 \quad (\text{decimal point moved to the left 1 place, as 1 zero in 10})$$

$$50 \div 100 = \frac{50}{100} = 0.50 = 0.5 \text{ or } 50 \times \frac{1}{100} = 0.5 \quad (\text{decimal point moved to the left 2 places, as 2 zeros in 100})$$

Note that we can add 0s as needed when moving the decimal point over.

Dividing by 10 is the same as multiplying by 0.10, or 0.1. After all, 0.1 means $\frac{1}{10}$... which is 1 divided by 10.

The decimal point is to the right of the one's place, whether or not it is written out. You can add a .0 to the right of a whole number without changing the meaning.

$$5 = 5.0 \text{ and } 4 = 4.0$$

Example: Multiply \$4.59 by 10.

$$10 \times \$4.59 = \$45.90$$

Example: $100 \times \$4$

$$100 \times \$4.00 = \$400 \text{ or } \$400.00$$

Example: $\$4 \div 10$ or $\frac{\$4}{10}$ or $\$4 \times 0.10$

$$\$4 \div 10 = \$0.40$$

KEEPING PERSPECTIVE →

A big part of consumer math is learning to use the right operation. You might want to make yourself a reminder about what addition, subtraction, multiplication, and division do to consult as needed. There is also an overview you can reference at the beginning of Quarter 3 (page 175).

Income Distribution Equation

When you get money (i.e., income), you can either give, save, or spend it.

$$\text{Income Distribution Equation}$$
$$\text{income} = \text{giving} + \text{saving} + \text{spending}$$

Notice that we listed *spending* last. When you get money, what do you think of first? For many, the answer would be how to spend it. Pausing to think about whether you should *give* or *save* money *before* you start spending can help you make better long-term financial decisions.

Important! This Income Distribution Equation does not tell us how much is in savings already. Instead, it looks at how much of the income received in a period of time is going toward giving, spending, or *increasing* savings.

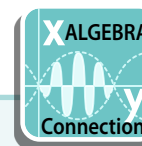
Look briefly at each value in the equation.

- **Income** is money you receive. Think of it as all the money that is coming into your hands — as the resources God is sending your way to steward.
- **Giving** is money you give away for others. God wants us to be “cheerful,” generous givers (2 Corinthians 9:7).
- **Saving** is money set aside; you might save for the unexpected, for big expenses, for retirement, and for long-term goals.
- **Spending** is money you do not keep or give. You will need to spend some money on taxes. If you have a home mortgage, you might have to spend on repaying your debt. Much of your spending will likely be on living expenses.

$$\text{spending} = \text{taxes} + \text{debt} + \text{living expenses}$$

Applying the Equation

The Income Distribution Equation can help you figure out how much you have left for one use of money after taking care of the others.



We could write the equation algebraically like this:

$$\text{income} =$$
$$\text{giving} + \text{saving} + \text{spending}$$
$$I = G + S_a + S_p$$

You can think of letters in math as emojis; just like an emoji stands for an emotion, letters stand for quantities, such as *I* for *income*.





The Income Distribution Equation is a formula. A **formula** is simply a mathematical relationship, often expressed in symbols instead of words. To use it, plug in the values and simplify.



Because God governs creation consistently, you can add in any order, perform the *same operation* using the *same amount* to both sides of an equation without changing the equality, and know that adding \$0 will not change the value (thus allowing us to simplify $\$0 + \textit{saving}$ to *saving*). We subtracted \$2,800, as that was the amount needed to get *saving* on a side by itself.

Example: If you make \$3,000 a month, give \$500, and spend \$2,300, how much are you saving?

The *income* (what you make) is \$3,000, *giving* is \$500, and *spending* is \$2,300.

$$\textit{income} = \textit{giving} + \textit{saving} + \textit{spending}$$

Insert values: $\$3,000 = \$500 + \textit{saving} + \$2,300$

Simplify addition: $\$3,000 = \$2,800 + \textit{saving}$

Subtract \$2,800 from both sides of the equation:

$$\begin{aligned} \$3,000 &= \$2,800 + \textit{saving} \\ -\$2,800 &- \$2,800 \\ \$200 &= \$0 + \textit{saving} \\ \$200 &= \textit{saving} \end{aligned}$$

As Christians, we want to be known as givers (we serve a giving God), so we have listed *giving* first and separately, as we want it to be a priority, not an afterthought. While many other Christian resources list giving separately, most apps and budgeting tools will clump giving as a part of spending.

If you are not given a separate giving amount in a problem, assume it is incorporated inside of *spending* and view *income* as equaling your *spending* plus *saving*.

Example: If you make \$3,000 a month and want to save \$600 of it, how much of it can you spend?

Since nothing is mentioned about *giving*, we will put a \$0 for it in the equation, but think of it as being part of the *spending* amount we calculate.

$$\textit{income} = \textit{giving} + \textit{saving} + \textit{spending}$$

Insert values: $\$3,000 = \$0 + \$600 + \textit{spending}$

Subtract \$600 from both sides of the equation:

$$\begin{aligned} \$3,000 &= \$0 + \$600 + \textit{spending} \\ -\$600 &- \$600 \\ \$2,400 &= \$0 + \$0 + \textit{spending} \\ \$2,400 &= \textit{spending} \end{aligned}$$

KEEPING PERSPECTIVE →

If you look just at your income for a period of time, you are either giving, saving, or spending it. Understanding this relationship can help you as you steward the resources God gives you. As He sends you income, you will have choices about how much to give, save, and spend — and where to do so.

Skill Review: Rounding & Percent

Before we continue, there are a couple of math concepts we will use throughout the course that we are going to review.

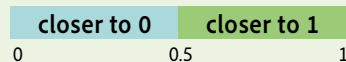
Rounding

Rounding helps throughout consumer math.

- As you solve problems on the calculator, you will get answers that have many digits after the decimal place. All those digits can get tedious to keep track of. In this course, you will typically **round your calculator's answer to the nearest cent**.
- You will also find rounding helpful when shopping. Have you ever noticed that retailers rarely use whole number prices? Mentally rounding \$1.99 to \$2 can help you not get fooled into thinking you are only paying \$1 when it is really almost \$2.
- Rounding can also help you approximate answers and spending.

»» To round, look at the digit to the right of where you want to round to. If it is a 5 or greater, round up. If it is less than a 5, round down. This is because if the digit to the right is 5 or more, the value is closer to the next whole dollar, cent, or other value we are rounding to; if it is less than 5, it is closer to the previous one.

In Matthew 10:30 we learn God keeps track of every hair everyone has ... "And even the very hairs of your head are all numbered."



Example: Round \$4,914.561767 to the nearest dollar.

\$4,914.561767
dollar's place ↓ digit to the right = 5 or greater (so round up)
\$4,915 (rounded the 4 up to a 5 and removed all the digits to the right)

Example: Round \$4,914.561767 to the nearest cent.

\$4,914.561767
cent's place ↓ digit to the right = less than 5 (so round down)
\$4,914.56 (kept the 6 as a 6 and removed all the digits to the right)

Example: Round \$5.295 to the nearest cent.

\$5.295
cent's place ↓ digit to the right = 5 or greater (so round up)
\$5.30 (rounded \$0.29 up to \$0.30)

When *rounding down*, we keep the digit we are rounding to as it is but remove all digits to the right of it.

Notice that this particular problem resulted in two digits changing.



Percent

A percent shows what portion of 100 something represents, making it an easy way to see what portion of a whole something represents. The list of consumer math percent applications goes on and on.

- **Stores** run percent-off sales.
- **Interest rates** are given as a percent.
- **Taxes** are a percent of income.
- **Tips** are calculated as a percent of the total.

If in a survey about a pool, we had 332 people out of 401 vote yes, that would be the same portion of the whole as 82.79 out of 100. **A percent shows us the portion of the whole.**

332 out of 401, or $\frac{332}{401}$
people voted yes

Percent notation: 82.79%
voted yes

82.79% could also be
written as $\frac{82.79}{100}$; it means
82.79 *per* 100.

For example, it is easier to compare what portion of the people surveyed supported a new pool when written using a percent.

Writing as a Percent

The percent sign, %, just means “*per* hundred.” Notice that it even has two tiny 0s, just like 100 has two 0s.

»» To rewrite a fraction or decimal as a percent:

Step 1: If a fraction, remember that a fraction means division, and complete that division.

$$\frac{332}{401} = 332 \div 401 = 0.827930174564 \approx 0.8279$$

Step 2: Once in decimal form, move the decimal point two places to the *right* (i.e., multiply by 100) and add a % sign (to show that the amount is really per 100).

$$0.8279 = 82.79\%$$

»» In this course, when rounding values, round to the 4th decimal place before writing as a %, as we did with 0.8279. This will result in 2 decimal places in the %, as in 82.79%.

Rewriting a Percent as a Decimal

The word *per* is a way of saying “divided by.” To rewrite a percent as a decimal, we simply complete the division. Since we are dividing by 100, we move the decimal point 2 places to the left.

$$20.12\% = 20.12 \div 100 = \frac{20.12}{100} = 0.2012$$

KEEPING PERSPECTIVE

Rounding and percents are both concepts you have hopefully learned in the past, but they are worth reviewing, as we will use them over and over again.

Giving & Calculating a Percent of a Value

$$\text{income} = \text{giving} + \text{saving} + \text{spending}$$

While giving is an afterthought for many people, we are starting with it because, biblically speaking, it is important. Think about it: God owns everything, yet He gave up heaven to become a man in order to give us eternal life. We serve an incredibly giving God. As we seek to reflect God's image here on Earth, giving is one of our greatest privileges. We should be asking God to work in our hearts a spirit of generosity and a love for others that flows out of our love for God. Generosity is part of exhibiting the Fruit of the Spirit love. As God fills our hearts with love for Him and others, we will want to use the resources at our disposal to bless those around us.

Giving is specifically called out in Romans 12:8 as one of the gifts of the Holy Spirit. While some will excel at this gift more than others, we are *all* called to give.

How Much Should We Give?

The Israelites were to bring a tithe of 10% of all they earned to God, along with other sacrifices and offerings. Altogether, they were really giving more than 20%. Back at this time in Israel, this giving would have included some of what we pay in taxes too, as the Levites also handled some of the responsibilities our government handles today.

The word *tithing* does not appear in the New Testament. Instead, there is a theme of giving regularly and generously. In 1 Corinthians 16:2, Paul instructed that money be set aside each week. There are examples of believers selling what they had and giving the entire "proceeds to all [who] had need" (Acts 2:45). Early believers did not limit themselves to giving 10%. In 2 Corinthians 9:7 it states "... for God loves a cheerful giver." He desires each of us to give abundantly, just as He does to us.

Calculating a Percent of a Value

You may find it helpful to set a percent of your income to give before you figure out how much is left to save or spend. That way, you guard against letting other priorities keep you from the joy of giving.

So how can you find a percent of your income? For example, what is 20% of \$1,599?

»» To determine a percent of another number, simply multiply the percent by that number. The word *of* proves helpful when calculating a percent. *Of* indicates multiplication. You multiply the percent by the value *of* which you want to take that percent.

For you know the grace of our Lord Jesus Christ, that though he was rich, yet for your sake he became poor, so that you by his poverty might become rich (2 Corinthians 8:9).



Some find 10%, the percent the Israelites brought as a tithe, as a helpful starting amount to give. Just keep in mind that God really owns everything, and He may call you to give more.

20% is the same as 0.20.

Example: Calculate 20% of \$1,599.

20% of \$1,599

$$0.20 \times \$1,599 = \$319.80$$

»» **Calculating 10% of a value is easy.** Multiplying by 10%, or 0.10, is the same as multiplying by $\frac{1}{10}$, which we reviewed earlier is really *dividing* by 10. So, simply move the decimal place to the *left* one digit to discover 10%.

Example: Calculate 10% of \$670.

10% of \$670

$$0.10 \times \$670 = \$67.0 = \$67$$

**KEEPING
PERSPECTIVE** →

The point is this: whoever sows sparingly will also reap sparingly, and whoever sows bountifully will also reap bountifully. Each one must give as he has decided in his heart, not reluctantly or under compulsion, for God loves a cheerful giver (2 Corinthians 9:6–7).

Notice these verses compare giving to sowing seeds. If you only sow a few seeds, you only get a small harvest, while more seeds yield more plants and thus more harvest. Some have interpreted this and a few other verses to mean that God promises a financial reward for giving, but the Bible never promises that godliness will lead to material wealth. Just look at Paul — he wrote most of the New Testament, yet he spent a lot of his life in prison. Jesus' Kingdom is “not of this world” (John 18:36).



The idea that giving leads to financial wealth here can stem from (and lead to) the love of money the Bible warns about. There is indeed a blessing in giving — but that blessing may be an eternal one. The harvest that we yield may be an eternal harvest, as what we give impacts souls for eternity. God promises, though, that He will give us what we need to complete the work He has given us to do.

And God is able to make all grace abound to you, so that having all sufficiency in all things at all times, you may abound in every good work (2 Corinthians 9:8).

Percentage Given

When you calculate a percent of a value, you end up with an amount that represents that portion of the value.

$$30\% \text{ of } \$400 \text{ is } \$120$$

$$0.30 \times \$400 = \$120$$

Now, we will generalize and write a formula for working with percent problems. To do so, we will use names to refer to the different parts of the equation. In the calculation above, \$120 is what we call the **percentage**; it is the number that is 30% of \$400. That is, if we look at \$400 as a whole made up of 100 parts, \$120 would be 30 of those parts.

Percent Formula

percent of base is percentage

$$\% \times \text{base} = \text{percentage}$$

or

$$P \times \text{base} = \text{percentage}$$

Do not let the terms *percent* and *percentage* confuse you. A *percent* is a portion of 100 (it will be written as a % or decimal), while a *percentage* [same word but with “age” at the end] is the *amount* that is that same portion of some value — it is the *result* of calculating a percent of a value.

Knowing this formula, we can then plug in values to calculate the percent (%) when we know the other values.

Example: What percent of \$13,000 is \$400?

The words *of* and *is* help us figure out where to plug in the values. When showing examples of solving a problem, we will use a *P* instead of %, since that is easier to handwrite.

$$P \times \$13,000 = \$400$$

We need to divide *both sides* by the same amount (\$13,000). We can show this with a fraction.

$$\frac{P \times \$13,000}{\$13,000} = \frac{\$400}{\$13,000}$$

Notice the division cancels out the multiplication on the left, leaving us with the equation below.

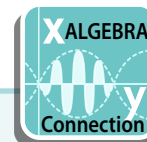
$$P = \frac{\$400}{\$13,000}$$

We can then complete the division, round, and write the answer as a percent.

$$P = \$400 \div \$13,000 \approx 0.0308 = 3.08\%$$

Books vary in the terms they use for the different values in a percent problem (or even rearrange the equation to solve for different values). A few common terms are shown. Whatever terms or method you have learned is fine to use.

% or rate of base or whole is percentage or amount or part



In algebra, we look at consistencies of God’s created order that hold true for any value and use that to find unknowns. Any value divided by itself equals 1. Thus, $\frac{\$13,000}{\$13,000}$ equals 1. And any value multiplied by 1 equals itself, which allows us to know that $P \times 1$ will just be P . (Note that we did not show the step of $\frac{\$13,000}{\$13,000}$ equaling 1; we just crossed it out and wrote P , as that is the end result.)

»» When you calculate a percent, round your answer to the fourth decimal place, then rewrite as a percent.

Example: $0.2012415 \approx 0.2012 = 20.12\%$

Notice that we ended up dividing the value after the “is” by the value after the “of” to calculate the percent. We are working with the same basic relationship we have been, only discovering a different value in that relationship.

Example: If you have an annual income of \$50,000 and give \$8,000, what percent of your income did you give?

We need to figure out what percent of \$50,000 is \$8,000.

P of \$50,000 is \$8,000

Replace the *of* with a multiplication sign and the *is* with an equal sign.

$$P \times \$50,000 = \$8,000$$

Divide both sides by \$50,000.

$$\frac{P \times \$50,000}{\$50,000} = \frac{\$8,000}{\$50,000}$$

Complete the division and write the answer as a percent.

$$P = \frac{\$8,000}{\$50,000} = 0.16 = 16\%$$

As we go forward, we often will not show every step of a percent problem. For example, we might show the above example like this:

$$P \times \$50,000 = \$8,000$$

$$P = \frac{\$8,000}{\$50,000} = 0.16 = 16\%$$

Remember that we got from the first line to the second by dividing both sides by the same amount (\$50,000).

KEEPING PERSPECTIVE →

Giving is truly a gift. It is a way we can experience the joy of helping others. And believe it or not, that is way more wonderful than getting all we want.

In all things I have shown you that by working hard in this way we must help the weak and remember the words of the Lord Jesus, how he himself said, “It is more blessed to give than to receive” (Acts 20:35).

The Methods & Heart of Giving

Since giving is important, we will take another look at some mechanics and further explore the heart of giving.

Methods

There are a lot of different ways to give — and I mean a lot. Below are a few of the methods, along with some considerations of each:

Method	Explanation	Considerations
→ Cash or Check	You can put a check or cash in your church's offering plate (or box) or mail it to the church or charity.	Be careful mailing cash, as it is easy to steal.
→ Electronically	You can often give via a credit card or electronic withdrawal from your bank account. You may even be able to automate giving this way, agreeing to pay a certain amount per month, which allows the church or charity to better plan.	If you use a credit card, the church or charity will have to pay a small credit processing fee, or you may opt to pay the fee. With electronic withdrawals, make sure you trust the security of the website or app before giving out your bank account information.
→ Directly from Paycheck	Some employers will allow you to give money to a charity directly from your paycheck.	You may be limited in where you can give.
→ Via a Payment App or Other Money Service	Payment apps or money services are particularly helpful when giving to individuals. If your account does not display your name, it can even be anonymous.	Gifts that are not to a qualifying nonprofit are not tax-deductible, but this may still be part of where God leads you to give. Be discerning and do your due diligence.

Donor-Advised Funds

- Donor-advised funds can help you give to multiple charities all in one place.
- Donor-advised funds may help you save on taxes by letting you count donations in different tax years.
- Donor-advised funds may help you give non-monetary gifts to a charity in a way that can help you save on taxes.

A few notes about donor-advised funds:

- There is usually a monthly fee for donor-advised funds, making it better suited for those giving a lot.
- Check the fund out thoroughly before you sign up. If the fund goes under, any money you have in there will too, so pick one that is respected.
- Funds may suggest deadlines before December 31 for end-of-the-year donations, so plan ahead.

Get a parent's permission before making any payment online or within an app.





Other Ways

There are many other ways to give, such as at the end of your life through your will or life insurance. You can also give your time, talents, or non-monetary resources. (So even before you have an income, there are plenty of ways to give.)

Calculating Amount Left to Reach a Giving Goal

»» To calculate the amount left to reach a giving goal, first discover the percent you have given. Then do one of the following:

1. Determine the amount (i.e., percentage) you want to give and subtract the amount (i.e., percentage) you have given from it.
2. Subtract the percent you have given from the percent you want to give and calculate that amount (i.e., percentage).

% of base is percentage

You can add and subtract numbers written as a percent just like you would other decimal numbers — just keep the percent sign in your answer.

Example: You check and see that you have given \$1,200 and have made \$20,000 so far this year. What percent of your income have you given, and how much more would you have to give to give 10%?

Calculate the percent you have given:

$$P \times \$20,000 = \$1,200$$

$$P = \frac{\$1,200}{\$20,000} = 0.06 = 6\%$$

METHOD 1

Amount (i.e., percentage) you want to give: $0.10 \times \$20,000 = \$2,000$

Subtracting what you have given: $\$2,000 - \$1,200 = \$800$

METHOD 2

Percent left to give: $10\% - 6\% = 4\%$

Amount (i.e., percentage): $0.04 \times \$20,000 = \800

KEEPING PERSPECTIVE →

You might be tempted to think that what little you can give does not make a difference. The truth, though, is that the *act* of giving will make a difference *in you*. God can do amazing things with small offerings, as the feeding of the 5,000 reminds us. In the Book of John and the Book of Matthew, Jesus took just five loaves of bread and two fish and used it to feed 5,000 men, plus women and children. Jesus did not need that boy's lunch — He could have made food appear from nothing. He does not need our money either. Yet He invites us to have the privilege of giving.

Start being a generous giver now. Do not wait until you have more money.

Review & Case Study

Your exercises will have you begin reviewing Lesson 1. Remember, when we get income, we either give, spend, or save it. Each paycheck gets broken down like we have learned:

$$\text{income} = \text{giving} + \text{saving} + \text{spending}$$

As we continue to explore this equation, we will apply the math we are reviewing to many other applications.

The Heart of Giving

Since we talked about giving in this lesson, we will look at some of what Jesus had to say about it. **Jesus talked about not giving for recognition from others.** The Pharisees gave for others to see, but that is not what God is after. Jesus said not to let our left hand know what our right hand is doing — in other words, to not give to impress others.

But when you give to the needy, do not let your left hand know what your right hand is doing, so that your giving may be in secret. And your Father who sees in secret will reward you (Matthew 6:3–4).

Jesus also talked about how **God cares about our hearts, not the value of what we give.** One day, Jesus pointed to a widow who put a very small amount into the treasury, yet Jesus said it was more than all the others because she put in all she had to live on.

Jesus looked up and saw the rich putting their gifts into the offering box, and he saw a poor widow put in two small copper coins. And he said, "Truly, I tell you, this poor widow has put in more than all of them. For they all contributed out of their abundance, but she out of her poverty put in all she had to live on" (Luke 21:1–4).

God does not need our money, but He wants our hearts. He wants us to have the joy of stepping out in faith and trusting Him with our finances by giving abundantly, even sacrificially like that widow. Giving is an opportunity for us to grow in faith — to partner with God and His work. And it can start *now*, even if you do not have very much. The following case study brings this point home.



Case Study: A Handful of Rice

This case study comes from Generous Giving. Generous Giving is a nonprofit that helps people on their journey in biblical generosity. They have been kind enough to grant us permission to share a synopsis of some of the modern-day true stories of people living out godly stewardship that they offer in video form on their website.

How could a state in India that has been called the “most backward state in India” and the “poorest of the poor”³ possibly give to advance God’s Kingdom? Mizoram Christians (in northeastern India) have every excuse not to give, yet their giving is astonishing.

Back in 1910, the church realized they needed “Bible women” to spread the gospel. They started a Handful of Rice (“Buhfai Tham”) ministry to support these women. The Handful of Rice ministry was simple: every time those participating cooked a meal, they set aside a handful of rice to take to the church. The church then sold the rice to get income for ministry.

More than 100 years later, the Handful of Rice ministry has grown, and giving has expanded even beyond a handful of rice. In 2009–2010, the equivalent of 1.5 million dollars was given through the Handful of Rice ministry, and 13 million dollars altogether. This poor state is able to support their own ministry and other gospel ministries.

The Mizorams’ giving attitude reminds us that we can *all* experience the joy of giving, no matter what our financial situation. One woman only makes the equivalent of less than a dollar a day,⁴ yet she is part of giving through a simple handful of rice. Giving has become a habit that does not depend on wealth. It is one you can start now and build on as you grow.

“As long as we have something to eat every day, we have something to give God everyday.”⁵
— Rev. Zosangliana Colney, Executive Secretary, Mizoram Presbyterian Church

“There have been times when some churches have thought that we need to get blessings from God ... and the attitude has been what can we get when we become part of the church. But here, the Handful of Rice offering inspires us that God has called us to share what we have with God, for God’s ministry.”⁶ — Rev. Dr. Roger Gaikwad, Principal, Aizawl Theological College

From Mizoram Women:

“I give because I believe it is a way of showing my gratitude to the Lord.”⁷

“Whenever I do this, I believe that I cook a meal for the Lord as well.”⁸

This write-up is based on a video from Generous Giving. Used by permission of Generous Giving; all rights reserved.