



**RIVERSIDE COUNTY
OFFICE OF EDUCATION**

EDWIN GOMEZ, Ed.D. | County Superintendent of Schools

**FINANCIAL
LITERACY**

Initiative



#FinancialLiteracyRivCo #RCOE



Financial Literacy Initiative

- Why Financial Literacy?
- College Affordability and Planning
- Financial Planning and Goal Setting
- Budgeting, Savings, Using Credit, Buying Goods and Services
- Income and Asset Protections
- Financial Investment and Retirements
- Entrepreneurship

Financial Literacy Initiative

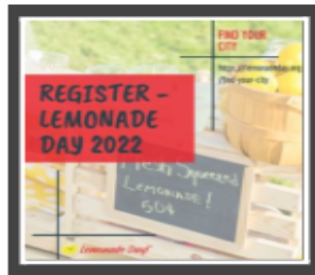
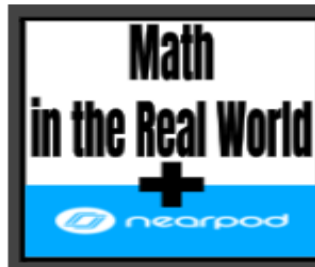
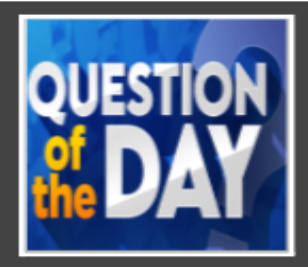




RCOE Financial Literacy Digital Dashboard



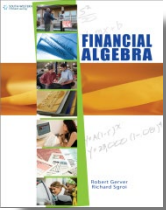
April is Financial Literacy Month



Advanced Algebra with Financial Applications: Options for Students Who Need 3-4 Years in Math

Girlie Ebuén

Murrieta Valley Unified School District



SOUTH-WESTERN
CENGAGE Learning



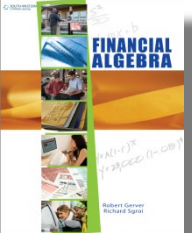
FINANCIAL ALGEBRA

Robert Gerver
Richard Sgroi

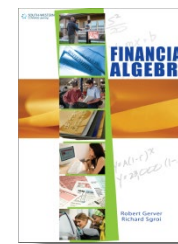
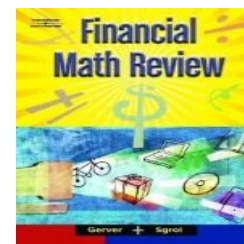
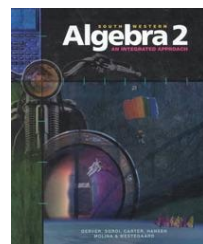
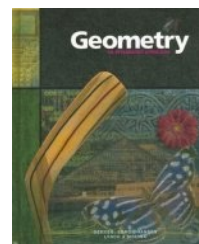
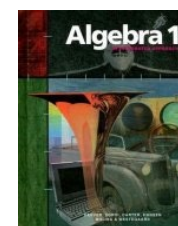
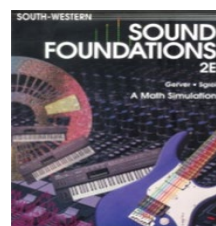
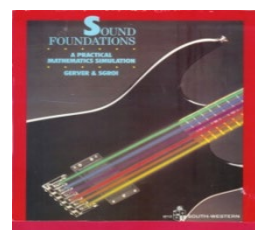
$\frac{52}{20}$
 $mx + b$
 $y = A(1-r)^x$
 $y = 23,000(1-.08)^x$

Cengage Learning's
Financial Algebra is the
only textbook aligned with this
newly-approved UC A-G course.
Advanced Algebra with Financial
Applications is a 'C' level
mathematics course.

© 2011



Experienced high school mathematics teachers and high school mathematics textbook authors!



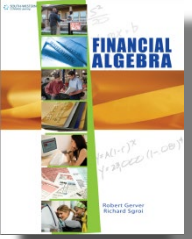
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Fox Lane High School (retired)
Bedford, NY

dr.rsgroi@gmail.com

www.cengage.com/community/financialalgebra



a-g Course Lists

Search Course Lists

[Begin New Search](#)

Other Options

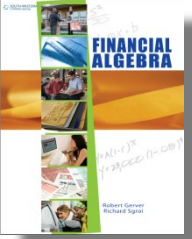
[a-g Interactive Guide Site](#)

[a-g Online Update Site](#)

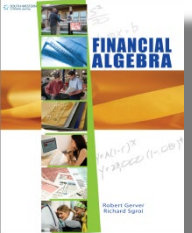
Results: 1 Schools or Programs offering course.

Course Title	School / Program	Subject Area (Category)	CTE
Advanced Algebra with Financial Applications	Bonita High School	Mathematics (Algebra 2)	

The authors worked closely with a California high school to receive UC approval for “*Advanced Algebra With Financial Applications*” using Cengage Learning’s *FINANCIAL ALGEBRA* textbook.

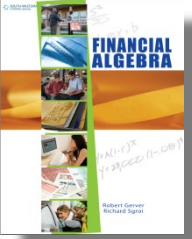


- A **mathematically rigorous, advanced algebra** course.
 - Not an arithmetic-based personal finance course.
- Includes selected topics from **Algebra 2, Precalculus, Statistics, Probability, and Geometry** that are taught at an ability-appropriate level for the Algebra 1 prerequisite audience.
- Has **Algebra 1** as a prerequisite and Algebra 1 skills are reinforced throughout.
- Has received **NCAA approval** for mathematics credit.
- **Technology-dependent** and **applications-oriented**.

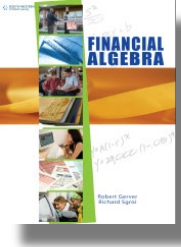


There is an abundance of rich, rigorous, and relevant mathematics content in *Financial Algebra* from Algebra 2, Precalculus, Statistics, Calculus, and Geometry, all with an Algebra 1 prerequisite.

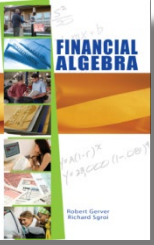
- Exponential functions
- Linear regression
- Quadratic-linear systems
- Expected value
- Piecewise functions
- Quadratic regression
- Probability
- Areas of regular polygons
- Functions
- Graphing
- Modified boxplots
- Greatest-integer function
- Limits
- Natural logarithms
- Rational Functions
- Polynomial Functions
- Correlation
- Literal Equations
- Spreadsheets
- Irrational Functions
- Monte Carlo Method
- Moving Averages



- Students in need of a **third or fourth-year math credit** that is UC A-G approved.
- Students looking to take a **math elective**.
- Students who may have experienced difficulty in Math 1/Algebra 1 and/or Math 2/Geometry and may **not be ready for Algebra 2 or Precalculus**.
- Students needing critical financial literacy skills they will need as adults—this is really ***all*** students!



- It is a chance for students who struggled in algebra and/or geometry to gain confidence in, and an appreciation for, mathematics.
- It allows solid mathematics students to use their mathematics savvy on a daily basis.
- All students need this material.
- It offers a mathematics course that addresses a current “hot topic” in education.
- It allows departments to graduate all students with 3 and 4 years of mathematics, and as a result could increase math enrollment.

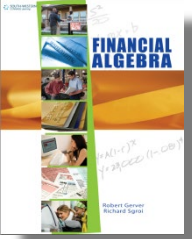


C T C F S

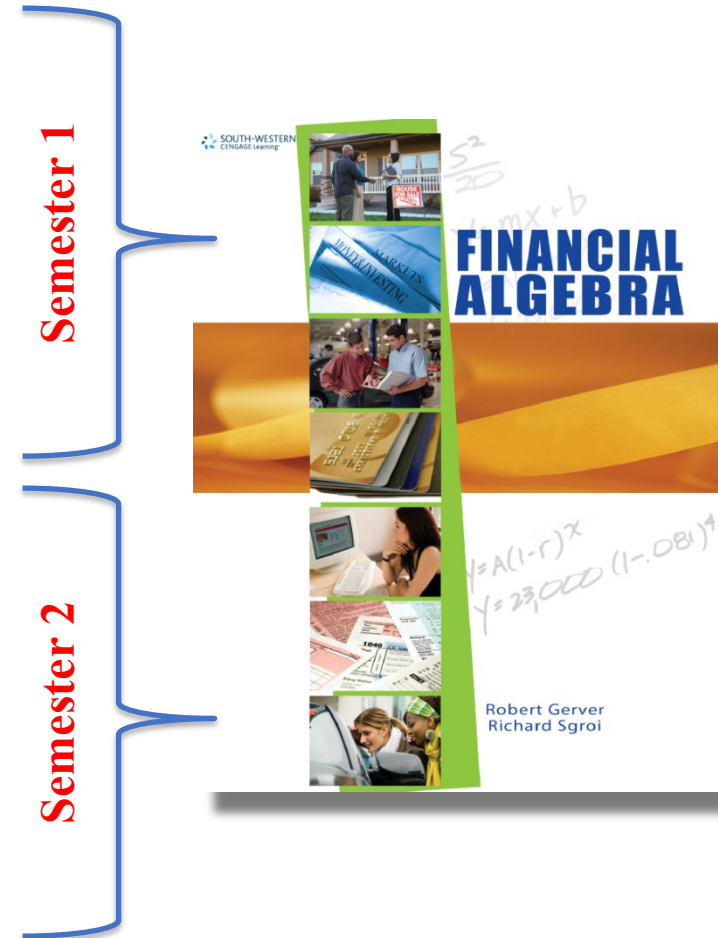
Freshman	Sophomore	Junior	Senior
Algebra 1	Financial Algebra	Geometry	Algebra 2
Algebra 1	Geometry	Financial Algebra	Algebra 2
Geometry	Algebra 2	PreCalc/Financial Alg.**	Calculus
Geometry	Algebra 2	Financial Algebra	Precalculus
Algebra 1	Geometry	Algebra 2	Financial Algebra*
-----TWO YEAR ALGEBRA-----		Geometry	Financial Algebra
Algebra 1	-----TWO-YEAR GEOMETRY-----		Financial Algebra

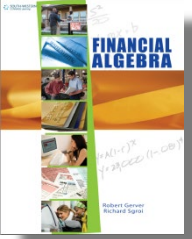
**Customize your senior course—a fall semester of matrices, polar coordinates, limits, etc., and then a spring semester of five chapters of Financial Algebra—Automobiles, Employment, Income Taxes, Credit and Banking.*

***Financial Algebra can be taken concurrently with Geometry, Algebra 2, or Precalculus, and it can be taken as an ELECTIVE.*



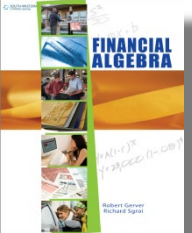
- Discretionary Expenses
- Employment Basics
- Income Taxes
- Banking Services
- The Stock Market
- Consumer Credit
- Automobile Ownership
- Preparing a Budget
- Independent Living
- Retirement





True or False:

Tax avoidance is not breaking any laws. Tax evasion is a crime.

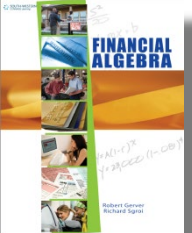


True or False:

Tax avoidance is not breaking any laws. Tax evasion is a crime.

Tax credits are another way to reduce your taxes. A tax credit is an amount you subtract from your tax *after* you looked it up on the tax table. Two popular credits are the Child Care Tax Credit and the Earned Income Credit. The amount of any credit is dependent on many different factors. The IRS offers tax credit worksheets on which taxpayers can determine if they qualify to claim a credit. If they do, they then transfer the amount to their tax return and it reduces the taxes owed.

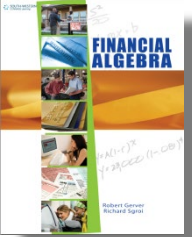
All tax deductions and tax credits are subject to certain limitations and restrictions, and it is important that you know the rules that apply. These limits and restrictions can change from year to year. If you use a rule to your advantage to lower your tax burden, you are not breaking any laws. This is called **tax avoidance**. If you lie about items on your tax return, you are committing **tax evasion**, which is a crime. You can learn about all tax laws by reading literature available online or by mail from the Internal Revenue Service (IRS). Even if you choose to have an accountant do your taxes, you still need to know what aspects of your financial life affect your taxes, so that you can tell your accountant everything needed to file your form.



Individual Federal Income Tax Formula

Distilled to its *simplest form*, the Individual Federal Income Tax formula can be seen as:

	Gross Income
-	<u>Deductions for Adjusted Gross Income</u>
=	Adjusted Gross Income (AGI)
-	Standard Deduction OR Itemized Deductions
=	Taxable Income
x	<u>Tax Rate</u>
=	Gross Tax Liability
-	<u>Tax Credits and Prepayments</u>
=	Tax Due (OR Tax Refund)



Excel Period3_ClassApartmentInfo - Saved

Search (Alt + Q)

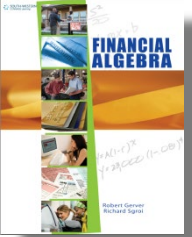
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Calibri 11 B Merge General \$.00

A2

	A	B	C	D	E	F	G	H	I	J	K
1	Location (city/state)	# of Bedroom & Bath	Square Footage	Price	Special Amenities	Link					
2											
3											
4											
5	In A5, insert screenshot/image of apartment						In G5, insert screenshot/image of floor plan				
6											
7											
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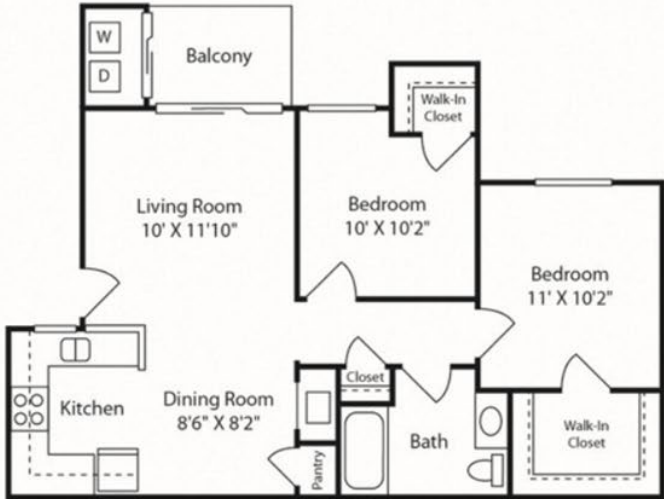

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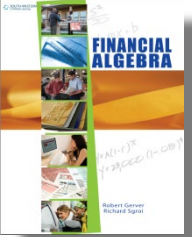
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Calibri 11 B

1	Location (city/state)	# of Bedroom & Bath	Square Footage	Price	Special Amenities	Link
2	Murrieta, CA	2bed 1 bath	810	\$2,176	pool, fitness center,	https://www.apartments.com/waterstone-at-murrieta-apartments-murrieta-ca/tj3w968/#amenitiesSection

In G5, insert screenshot/image of floor plan





Excel Period3_ClassApartmentInfo - Saved

Search (Alt + Q)

File Home Insert Draw Page Layout Formulas Data Review View Automate Help

Calibri 11 B Merge Currency \$.00 .00

M9 =L9/K9

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
									Location (city/state)	# of Bedroom & Bath	Square Footage	Price	Price/Sq Ft	
1	Go to													
2	https://www.apartments.com/								Oceanside, CA	1bd/2ba	791	\$2,655.00	\$3	
3									Seattle, WA	1bd/1ba	753	\$2,525.00	\$3	
4	Look for an apartment that you plan on moving to in 1-, 6- or 12-months from now.								Beach Blvd, CA	2bd/2ba	1000	\$2,900.00	\$3	
5	Find price and square footage.								Phoenix, Arizona	1bd/1ba	850	\$1,589.00	\$2	
6	Take screenshot of images of home and floor plan.								Murrieta, CA	2bd/1ba	810	\$2,176.00	\$3	
7	See next sheet for sample info.								Murrieta, CA	1bd/1ba	459	\$1,620.00	\$4	
8									Meridian, Idaho	2bd/2ba	1015	\$1,625.00	\$2	
9									New York	1bd/1ba	642	\$4,650.00	\$7	
10									Murrieta, CA	1bd/1ba	630	\$1,695.00	\$3	
11									Murrieta, CA	1bd/1ba	630	\$1,695.00	\$3	
12									San Bernardino CA	1bd/1ba	730	\$1,960.00	\$3	

usage. Express algebraically the number of years it will take for the dishwasher to pay for itself.

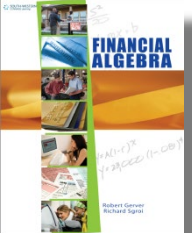
Rational Functions

In this section, you have studied utility expenses. You will now examine the average electric utility cost of running appliances in a home by using an average cost function in the form of a rational function. A function is a rule that assigns a unique member of the range to each element of the domain. Example 1 looked at a limit of a polynomial function. A rational function is an algebraic fraction in which both the numerator and denominator are polynomials. Below are examples of rational functions $a(x)$, $b(x)$, and $c(x)$.

$$a(x) = \frac{2}{x-3} \quad b(x) = \frac{2x+5}{x} \quad c(x) = \frac{2x^2-5x-3}{x+4}$$

In general, a rational function has the form $f(x) = \frac{g(x)}{h(x)}$ where $g(x)$ and $h(x)$ are polynomials and $h(x) \neq 0$. Notice that values of x where the polynomial in the denominator equals zero must be excluded since division by zero is undefined. The rational function in the next example gives you information about the yearly average cost of running an electrical device in a home.

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☰ ▼ Topic #5: Employment Basics & Income Taxes

☰ 📄 **09/23-26/2022: Topics 5.1-5.2 Pay Periods and Hourly Rates**
Sep 26, 2022 | 0 pts

☰ 📄 **09/29-30/2022: (p. 311)Topic 5.3 Commissions, Royalties and Piecework Pay, KHAN: Percent & Fractions**
Sep 30, 2022 | 0 pts

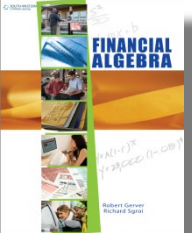
☰ 📄 **10/06-07/2022: (p. 323) Topic 5.4 Social Security & Medicare**
Oct 10, 2022 | 0 pts

☰ 📄 **10/11/2022: KHAN Academy-- Piecewise Functions**
Oct 12, 2022 | 0 pts

☰ 📄 **10/13/2022 QUIZ: Topics 5.1-5.3 Pay Periods & Hourly Rates, Piecework Pay**
Oct 13, 2022 | 5 pts

☰ 📄 **10/17/2022 Kahoot! Quiz/Test Review**
Oct 17, 2022 | 0 pts

☰ 📄 **10/17/2022 TEST: Topic 5 Employment Basics**
Oct 17, 2022 | 10 pts



09/23-26/2022: Topics 5.1-5.2 Pay Periods and Hourly Rates

Published

Edit



09/23.26/2022

Financial Literacy Topic(s): 5.1-5.2 Pay Periods and Hourly Rates

Math Topic(s): Linear & Piecewise Functions

1) Finish any work from last class.

2) Read/Discuss/Take notes on textbook (pp.298-301) Topic 5.2 Pay Period and Hourly Rates: *"What Do You Need to Know to Make Sure Each Paycheck is Correct?"*

View [Notes](#)

3) Login to Khan Academy to complete assignments/quizzes. Check student dashboard for tabs *Active* and *Past* to view assignment list. See sample videos below.

4) Go to Financial Algebra textbook. Complete (p.304)14-18(all)

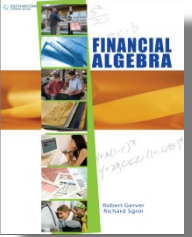
[What is a Paycheck?](#)

[How to Read Your Paystub?](#)

[Understanding Your Paycheck](#)



[How to Make Sense of Your Pay Stub](#)



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2022/2023 - Murrieta Cany...

- Home
- Announcements
- Syllabus
- Modules
- Assignments
- Microsoft OneDrive
- LockDown Browser
- Quizzes
- Pages
- People
- Rubrics
- Grades
- Files
- Discussions
- Collaborations
- Outcomes
- Settings

09/15-16/2022: Topics 1.3-1.4 More Discretionary (Entertainment & Travel) Expenses

Published Edit ⋮

09/15-16/2022

Financial Literacy Topic(s): 1.3-1.4 More Discretionary (Entertainment & Travel) Expenses	Math Topic(s): Measures of Dispersion-- Standard Deviation, Z-zcores
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- 1) Finish any work from last class.
- 2) Read/Discuss/Take notes on textbook (pp.34-39) Topic 1.4 Vacation Expenses: *"How Can Graphs Help Describe Frequency Distributions?"*
- 3) Login to Khan Academy to complete assignments/quizzes. Check student dashboard for tabs *Active* and *Past* to view assignment list. See sample videos below.

ASSIGNMENT

[Standard deviation of a population](#)
Exercise • Different question set

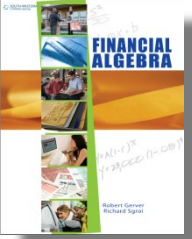
[Variance](#)
Exercise • Different question set

[Sample and population standard deviation](#)
Exercise • Different question set

[Summarizing quantitative data: Quiz 3](#)
Quiz

Sample Videos

Measures of spread: range, variance & standard deviation	Variance of a population	Population standard deviation
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01/12-13/2023 Topics 3.1 Introduction to Consumer Credit; Upload Excel Spreadsheet for TEXTBOOK: (p.155) 10-13

✓ Published ✎ Edit ⋮

01/12-13/2023

Financial Literacy Topic(s): 3.1 Introduction to Consumer Credit	Math Topic(s): Exponential Functions
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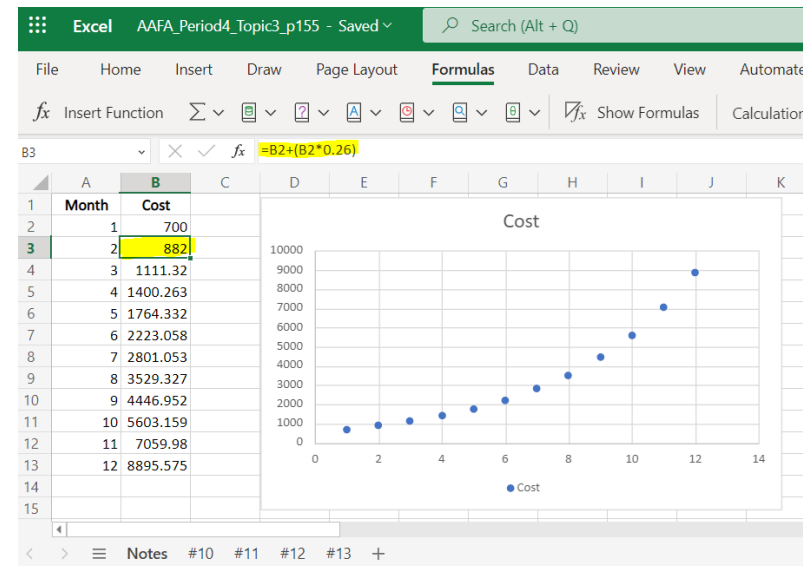
1) Read/Discuss/Take notes on textbook (pp.148-153) Topics 3.1 Introduction to Consumer Credit: "How can Interest be Compounded Continuously?"

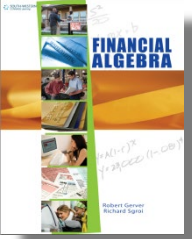
2) Task/Discuss/Notes: (pp.148-153) Topics 3.1 Introduction to Consumer Credit

Notes: Excel Spreadsheet

Video:

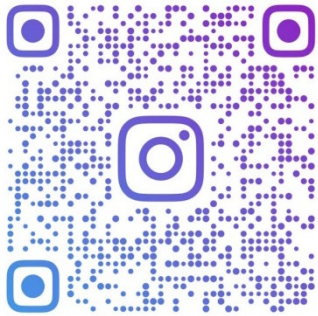
3) Today's Assignment(s): Go to Financial Algebra textbook. Complete (p.155) 10-13





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