The $36,000 Loan Secret

How payment structure impacts your total cost

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MATH 2030 - Module 2

Loan Amortization - Simple Explanation

What This Project Is About:

- Comparing two ways to pay back loans
- Finding which method saves you more money
- Like comparing payment plans for a house or car

The Two Payment Methods:

Annuity Method

- **"The Easy Budgeting Plan"**
- Same payment every month
- Used for most mortgages
- Good for predictable budgeting

Straight-Line Method

- **"Pay More Now, Save Later"**
- Payments decrease over time
- Higher payments early
- Good for long-term savings

The $36,095 Difference

$200,000 Loan at 5% for 30 Years

Metric	Annuity	Straight-Line
Monthly Payment (Start)	$1,074	$1,389
Monthly Payment (End)	$1,074	$558
Total Interest	**$186,511**	**$150,417**

Key Finding

Straight-line method saves $36,095 (19.4%) in total interest

Faster Equity Building

Time to Reach 50% Equity

Method	Time to 50% Equity
Annuity Method	24 years
Straight-Line Method	15 years

- Straight-line builds equity **2x faster** in early years
- You own half your asset **9 years sooner**
- Same loan term, different wealth building

Which Method For You?

Choose Straight-Line If:

- Can handle higher initial payments
- Want to save $36,000+
- Plan to build equity quickly

Choose Annuity If:

- Need payment stability
- Have tight initial budget
- Prefer predictable payments

Takeaway

Loan structure matters as much as interest rate

Repository: https://github.com/Ad862002/Math—2030-Module-2.git