

College Loans

I want to give my students a chance to think through the college loan process as a way of building empathy.

Step 1: Class discussion using the queries below.

Step 2: Work through the loan repayment formula, which is a variation on the compounded interest formula

Step 3: Assign PW College Tuition

Step 1

Below are several queries I will use to open my problem of the week about college loans. I have provided my own anticipated answers in [blue](#), but I suspect the students will surprise me with the responses they provide.

- What do you look for when deciding which college to apply to?
 - [Strong academics](#)
 - [Particular sports program](#)
 - [Urban/Rural](#)
 - [Location](#)
 - [Finances](#)
- What expenses does your college tuition cover?
 - [Professor salaries](#)
 - [Administrators](#)
 - [Athletic center/facilities](#)
 - [Marketing](#)
 - [Financial aid](#)
- In his presidential campaign, Bernie Sanders advocated for free tuition at all public universities across the country. He would pay for this plan by taxing Wall Street speculation. Is this a fair plan for students who would otherwise not be able to afford college? For students who can afford college tuition? For Wall Street speculators?
[\(https://berniesanders.com/issues/its-time-to-make-college-tuition-free-and-debt-free/\)](https://berniesanders.com/issues/its-time-to-make-college-tuition-free-and-debt-free/)
 - [Great for students who couldn't afford](#)
 - [Medium for students who can afford](#)
 - [If you're engaging in inherently risky trades, you should be taxed](#)
- What factors does a university consider when determining whether to admit a student?
 - [Academic record](#)
 - [Sports ability](#)
 - [Race](#)
 - [Extracurriculars/community involvement](#)

- Ability to pay
- Given that it can cost anywhere from \$30,000 to \$60,000 to attend college for one year, how should students pay this charge?
 - Parents pay
 - Get a job
 - Scholarships/grants
 - Get a loan
 - Parents get a loan

Step 2

$$FV = \left(PV - \frac{P}{r} \right) (1 + r)^n + \frac{P}{r}$$

FV – The outstanding debt after a certain period of time

PV – The initial loan amount

P – The amount you pay each pay period

r – The interest rate expressed as a decimal between 0 and 1

n – The number of payment periods

Step 3



PW College Tuition



Your friend Jamie just received an acceptance letter to George Washington University. Jamie’s dream school is located in DC just blocks from the White House and has most well-connected political science department in the country. A few weeks later, Jamie receives a financial aid award letter and looks upset. If Jamie sticks to their financial plan, they will have to take out a loan to finance their education.

1. Calculate, showing your work

- The total amount of the loan if applied to all four years of undergraduate education
- How many it will take to repay the loan
- The total amount of money spent to repay the loan
- How much money Jamie will pay in interest over the life of the loan

For these calculations, assume that Jamie will repay \$200 every month once they graduate and that all loans accrue interest at a [3.76% annual interest rate](#)¹.

You ask Jamie about what other schools they're looking at, and Jamie shows you an acceptance letter and financial aid offer from American University. AU is another well-regarded university in Washington, DC with a strong political science department. However, it is located much farther out of the city's center and Jamie had always considered it as a second choice. You take a look at their financial aid award letter and realize Jamie has a big decision to make.

2. Calculate, showing your work

- The total amount of the loan if applied to all four years of undergraduate education
- How many months it will take to repay the loan
- The total amount of money spent to repay the loan
- How much money Jamie will pay in interest over the life of the loan

3. Jamie asks your advice about which university to attend. Write a paragraph about your advice for your friend. Be sure to reference your calculations in your explanation as well as Jamie's expressed preferences in schools.

Answer Key

University	Loan/yr	Total Loan	Months to Repay	Amount Repaid	Interest Paid
AU	\$4,000	\$16,000	93	\$18,600	\$2,600
GW	\$9,500	\$38,000	290	\$58,000	\$20,000

¹ <https://studentaid.ed.gov/sa/types/loans/subsidized-unsubsidized#interest-rates>

Supplemental Documents



Award Notification 2011-2012

Award Date: 07/26/2011 12:08 PM

Recognizing that financing your college education is fundamental to success at The George Washington following financial aid awards:

	Fall 2011	Spring 2012	TOTAL
Federal Pell Grant	\$750.00	\$750.00	\$1,500.00
Federal Perkins Loan	\$1,000.00	\$1,000.00	\$2,000.00
Federal Subsidized Stafford	\$2,750.00	\$2,750.00	\$5,500.00
Federal Unsubsidized Stafford	\$1,001.00	\$999.00	\$2,000.00
Federal Work-Study Program	\$1,300.00	\$1,300.00	\$2,600.00
University and Alumni Award	\$16,250.00	\$16,250.00	\$32,500.00
Total Awards	\$23,051.00	\$23,049.00	\$46,100.00

<http://www.thecollegesolution.com/wp-content/uploads/2014/03/GWU-letter.jpg>
12/21/2016

American University

On Campus Off Campus

STICKER PRICE: \$53,653 FOR FIRST YEAR



ESTIMATED DEBT AFTER SCHOOL

You'll pay approx.
\$226
per month for 10 years
to cover your Total
Borrowing

[Learn more](#)

This equals
5
\$50
TEXTBOOKS
every month

DEBT BURDEN

MEDIUM
Based on your
estimated debt
and the average
national salary for
Bachelors
graduates, not
school specific

FIRST-YEAR FINANCIAL AID AWARD [Learn more](#)

SCHOLARSHIPS & GRANTS		FEDERAL LOANS	
\$10,000		\$4,000	
Pell Grant	0	Perkins Loan	0
Other Scholarships & Grants	10,000	Subsidized Stafford Loan	0
Military Tuition Assistance	0	Unsubsidized Stafford Loan	4,000
GI Bill	0		
CONTRIBUTIONS		PRIVATE LOANS	
\$10,000		\$0	
What You Can Pay	2,000	Loans from Your School	0
What Family & Others Can Pay	8,000	Other Loans	0
Parent Loans	0		
Work Study	0		

[Confirm & Collapse](#)

FIRST-YEAR COSTS [Learn more](#)

\$53,653 total

Tuition & Fees	\$8,071	Room & Board	13,648
Books & Supplies	800	Personal Costs	1,134

SCHOOL INDICATORS [Learn more](#)

Graduation Rate (79%)	BETTER THAN AVERAGE
Retention Rate (91%)	BETTER THAN AVERAGE
Federal Student Loan Default Rate (2%)	BETTER THAN AVERAGE

https://costofcollege.files.wordpress.com/2012/04/20120414-coccomparefaletters1.jpg
12/21/2016