Borrowing Money- Loan Payments and Estimates

While the last section talked about investing and saving money for retirement or cars or houses, if you are a typical student your current financial situation probably necessitates that you take out some loans. Maybe you have a loan for car payments or education. How do you determine your monthly payment? How much interest do you pay?

Suppose you borrow $1000 at 6% APR compounded monthly. Most consumers prefer to **amortize** their loan by paying an equal amount each month (although the last month will be a little bit different).

Here is a snippet of a spreadsheet if you paid $200 a month.

	A	B	C	D	E	F	G
1	Month #	Principal	Interest	Total	Payment	New Principal	
2	1	$1,000.00	$ 5.00	$1,005.00	$200.00	$ 805.00	
3	2	$ 805.00	$ 4.03	$ 809.03	$200.00	$ 609.03	
4	3	$ 609.03	$ 3.05	$ 612.07	$200.00	$ 412.07	
5	4	$ 412.07	$ 2.06	$ 414.13	$200.00	$ 214.13	
6	5	$ 214.13	$ 1.07	$ 215.20	$200.00	$ 15.20	
7	6	$ 15.20	$ 0.08	$ 15.28	$200.00	$ (184.72)	
8							

You can see that we have paid too much money!
If we make payments of $169.60 you will end up paying 3 extra cents

	A	B	C	D	E	F
1	Month #	Principal	Interest	Total	Payment	New Principal
2	1	$1,000.00	$ 5.00	$1,005.00	$169.60	$ 835.40
3	2	$ 835.40	$ 4.18	$ 839.58	$169.60	$ 669.98
4	3	$ 669.98	$ 3.35	$ 673.33	$169.60	$ 503.73
5	4	$ 503.73	$ 2.52	$ 506.25	$169.60	$ 336.65
6	5	$ 336.65	$ 1.68	$ 338.33	$169.60	$ 168.73
7	6	$ 168.73	$ 0.84	$ 169.57	$169.60	$ (0.03)
8						

So just adjust the last month payment to $169.57 and all is well.

You can use the SUM command on Excel to add all of your payments together to see how much you have paid in total.

Installment Loans - money is borrowed for a fixed period of time, called the **term** of the loan, and the borrower makes **regular payments** (usually monthly, but can be at any fixed interval) to pay off the loan plus interest accumulated during that time. **Interest** is usually calculated using the same fixed interval on the balance still owed (called the **principal**). Every payment is an identical amount, but a portion goes towards the interest owed that month and a portion goes towards the principal (balance) on the loan.
In general, the current balance = previous balance + interest accrued - payments. It is traditional to list for each month the Balance, the Interest Paid and the Principal Paid on the balance sheet (or amortization table).