

6.2 Buying Now, Paying Later

- ▶ Create an amortization table.
- ▶ Analyze the cost of buying on credit.
- ▶ Analyze credit in the United States.

Compound Interest Payments

Interest that is calculated on both the principal *and* accumulated interest is **compound interest**. Compound interest is applied to the vast majority of loans.

Monthly Payment for Installment Loans

The monthly payment M for an installment loan with a principal of P taken out for n months at an annual percentage rate of r (in decimal form) is

$$M = P \left(\frac{r/12}{1 - \left(\frac{1}{1 + (r/12)} \right)^n} \right)$$

Math.andYOU.com

You can access a monthly payment calculator at *Math.andYou.com*.

Study Tip

To *amortize* means to decrease an amount gradually or in installments. The schedule of payments for an installment loan is called an *amortization table*.

EXAMPLE 1 Creating an Amortization Table

You borrow \$1200 for 6 months. The annual percentage rate is 6%.

- a. What is the monthly payment?
- b. Create an amortization table showing how the balance of the loan decreases.

SOLUTION

a. $M = 1200 \left[\frac{0.005}{1 - \left(\frac{1}{1.005} \right)^6} \right] = \203.51

0.06/12 →

b.



	A	B	C	D	E
	Payment Number	Balance before Payment	Monthly Interest	Monthly Payment	Balance after Payment
1	1	\$1,200.00	\$6.00	\$203.51	\$1,002.49
2	2	\$1,002.49	\$5.01	\$203.51	\$803.98
3	3	\$803.98	\$4.02	\$203.51	\$604.49
4	4	\$604.49	\$3.02	\$203.51	\$404.00
5	5	\$404.00	\$2.02	\$203.51	\$202.50
6	6	\$202.50	\$1.01	\$203.51	\$0.00

0.005(1200) →

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Help at *Math.andYOU.com*

What is the cost of credit for the loan above? Does the cost of credit double when the term doubles? Explain your reasoning.

