REVIEW OF BASIC CONCEPTS PART 3

WHAT WILL YOU LEARN?

- How do you find effective interest rates?
- How do you adjust for compounding periods?
- What is continuous compounding?

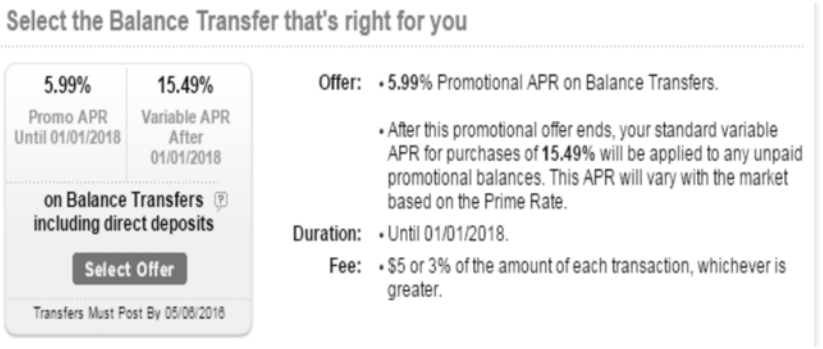
LOAN PROBLEM

- The purchase price of the car you would like to buy is $37,150. You want to take out a loan (100% financing) with a maturity of 60 months. The first loan payment will come in one month's time, and the interest rate is 4% per year, compounded monthly. What are the monthly car payments?

COMPOUNDING PERIODS

- The phrase "the interest rate is 4% per year, compounded monthly" tells us what the interest rate is per compounding is.

ANNUAL PERCENTAGE RATE (APR)



APR (ANNUAL PERCENTAGE RATE) VS EFFECTIVE RATES

- The interest rate was given as 4% per year, compounded monthly.
- This is not the effective interest rate.
- This is the stated interest rate (or sometimes called the APR on your credit card statement).
- How do we find the effective annual interest rate?

EFFECTIVE INTEREST RATE

- Suppose the stated interest rate is 4% per year, compounded monthly.
- Let's find the effective annual rate.

EFFECTIVE INTEREST RATE

- Let's calculate other effective rates.
  - effective 2-month rate
  - effective 3-month rate
  - effective 6-month rate
  - effective 18-monthy rate

ANOTHER EXAMPLE

- What if r = 6% per year, compounded semiannually?
- What is the effective annual rate?

ANOTHER EXAMPLE

- What if r = 6% per year, compounded semiannually?
- What is the effective annual rate?
- What about other effective rates?
  - effective six-month rate?
  - effective three-month rate?
  - effective 2-year rate (or 24-month rate) ?
  - effective 15-month rate?

CONTINUOUS COMPOUNDING

- What if instead of every month, interest rate is compounded every instant, say continuously?

SUMMARY

- Difference between stated interest rate and effective rate
- Compute effective rates
- Compute continuously compounded rate