Today:

1. Notations
2. Compound vs. Simple Interest
3. Nominal Rates
4. Rate of Discount
5. Force of Interest

In Class Exercises:

1. Roger has $1,000 to invest. Which of the following will yield him the greatest amount of interest after 1 year?
   (A) Simple annual interest rate of 9%
   (B) Annual effective interest rate \(i=8.25\%\)
   (C) Nominal discount rate \(d(i)=8.75\%\)
   (D) Nominal interest rate \(i(2)=8.5\%\)
   (E) Force of interest \(\delta =7.75\%\)

2. Eric deposits 100 into a savings account at time 0, which pays interest at a nominal rate of \(i\), compounded semiannually.
   Mike deposits 200 into a different savings account at time 0, which pays simple interest at an annual rate of \(i\).
   Eric and Mike earn the same amount of interest during the last 6 months of the 8th year.
   Calculate \(i\).
3. Tawny makes a deposit into a bank account which credits interest at a nominal interest rate of 10% per annum, convertible semiannually. 
At the same time, Fabio deposits 1000 into a different bank account, which is credited with simple interest.
At the end of 5 years, the forces of interest on the two accounts are equal, and Fabio's account has accumulated to \( Z \).
Determine \( Z \)

4. David can receive one of the following two payment streams:
   (i) 100 at time 0, 200 at time \( n \), and 300 at time \( 2n \)
   (ii) 600 at time 10
At an annual effective interest rate of \( i \), the present values of the two streams are equal.
Given \( v^n = 0.76 \), determine \( i \).