Lecture 8

Friday, September 20, 2024 9:19 AM

Continue to work on the last worksheet.

Continuous compounding:
You put $1000 in your account. The APR is 4%. What will you have in 5 years if
(a) the compounding period is 1 year
(b) the compounding period is 1 month
(c) the compounding period is 1 day
(d) the compounding period is 1 hour
(e) the compounding period is 1 second
(f) the compounding period is 0.01 second

In general, if there are k compounding periods a year, then the interest rate per period is $i = \frac{APR}{k}$. In n years, there will be nk compounding periods, and you will have

$$A = P(1+i)^{nk} = P\left(1 + \frac{APR}{k}\right)^{nk}$$

This number approaches Pe^{n*APR} as $k \to \infty$.