Financial Engineering HW1

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March 17, 2020

We learn the time value of money

$$FV = P\left(1 + \frac{r}{m}\right)^{mn}$$

if m becomes infinity

$$FV = Pe^{rn}$$

We also learn the annuity. It pays out the same C dollars at the end of each year for n years. The formula is

$$FV = \sum_{i=0}^{n-1} C(1+r)^i$$

The present value of a general annuity is

$$PV = \sum_{i=1}^{nm} C\left(1 + \frac{r}{m}\right)^{-i}$$

The internal rate of return (IRR) is the yield which equates an investment's present value of with its price P

$$P = \frac{c_1}{1+y} + \frac{c_2}{(1+y)^2} + \cdots + \frac{c_n}{(1+y)^n}$$