MATH 102: HOMEWORK 4

DUE DATE: THURSDAY, OCT 24

Note that you need to turn in LaTeXversion of this homework.
Do Problem 1 below AND the problems from the book

Problem 1. In class on Oct 8, we discussed about inflation and present value. In short, if someone gives you F amount of dollars every year and the inflation rate is r, then the present value of N year of this fixed income would be

$$PV = F + \frac{F}{1+r} + \cdots + \frac{F}{(1+r)^N}\,.$$

(1) Use induction to prove that after N year,

$$PV = F\left(\frac{1+r-\frac{1}{(1+r)^N}}{r}\right)$$

(2) Apply this to the situation when $F = \$1$ and $r = 5\%$ (I made a mistake in class about this)
(3) What happen if you were to live forever? How much would you buy a stock if it pays you \$1 per year from now to eternity?

Problems from the file chapter4-hw.pdf

Try: 4.4, 4.5, 4.7, 4.21, 4.23
Grade: 4.4.f, 4.5.a,b, 4.7, 4.21.b, 4.23.a

Date: October 10, 2024.