Corporate Finance, Module 2: "How to Calculate Present Values"

Homework Assignment

(The attached PDF file has better formatting.)

The homework exercises cover the basic formulas needed for net present value calculations. The final exam tests the financial theory, not mathematics, but these formulas are needed to solve financial problems.

Exercise 2.1: Compounding Intervals

What is the value of 6,000 after 6 years invested at 3% a quarter?

Exercise 2.2: Doubling Investments

How long will it take a dollar to double if it is invested at

A. 5%
B. 12%

Use logarithms to compute the answer: $2 = 1 \times (1 + r)^t \Rightarrow ln\, 2 = t \times ln\, (1 + r)$.

Exercise 2.3: Net Present Value

What is the net present value of an investment of 2,500 that produces income of 670 a year for 5 years at a discount rate of 10% per annum *per annum*?

Exercise 2.4: Net Present Value

What is the net present value of an investment costing 2,000 that produces cash flows of 700 in year 1, 700 in year 2, and 900 in year 3 if the discount rate is 10% *per annum*?

Exercise 2.5: Savings and Consumption

A worker now has 10,000 and expects to save 5,000 next year and then pay 4,000 in 2 years' time and 3,000 in 3 years' time for a new car. How much can the worker spend now and still have enough to buy the car if savings earn 7% *per annum*?

Exercise 2.6: Perpetuity

A lottery winner receives 750 in 1 year's time and annually thereafter in perpetuity. What is the value of this perpetuity at an interest rate of 10% *per annum*?

Exercise 2.7: Delayed Perpetuity

How much is the previous perpetuity worth if it begins in 10 years time instead of in 1?

Exercise 2.8: Growing Perpetuity

If the lottery winner receives 750 in 1 year's time and this amount increases 5% per annum, what is the present value of this growing income stream at a 10% interest rate?