Lecture 1 – Team Activity

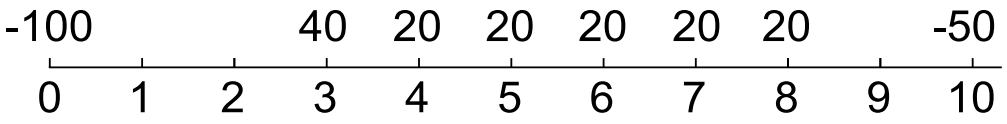
Question 1: A stock was bought for $10 and sold one month later for $10.50.

a) What is the effective monthly rate of return?

b) What is the APR compounding per month?

c) What is the effective annual rate of return?

Question 2: A project costs $100 now and $50 in 10 years. In 3 years it will pay back $40, and every year after that for the next 5 years it will pay back $20. The effective annual interest rate is 10%. What is the present value of the project? The below timeline shows the cash flows.



Question 3: You want to buy a $300,000 apartment. You haven't saved a deposit. The bank offers you a fully amortising mortgage with a term of 30 years and an interest rate of 6% pa. How much will your monthly payments be?

Question 4: A credit card advertises an interest rate of 24%.

Note that credit cards are paid monthly.

a) Find the effective monthly rate.

$r_{eff,monthly} =$

b) Find the effective annual rate.

$r_{eff,annual} =$

c) Find the effective 6 month rate.

$r_{eff,6mth} =$

d) Find the effective quarterly rate.

$r_{eff,qtrly} =$

e) Find the Annualised Percentage Rate (APR), compounding every 6 months (rAPR, 6mth comp).

$r_{APR,comp\ per\ 6mths} =$

f) Find the APR compounding per day. Assume 30 days in a month and 360 days in a year.

$r_{APR,comp\ daily} =$

Question 5: A bond is advertised with a coupon rate of 7%, paid semi-annually. The yield of the bond is 6%.

Note that the bond pays semi-annual coupons so the yield is quoted as an Annualised Percentage Rate (APR) compounding every 6 months.

a) Find the effective six-month rate.

$r_{eff,6mth} =$

b) Find the effective annual rate.

$r_{eff,annual} =$

c) Find the effective monthly rate.

$r_{eff,monthly} =$

d) Find the effective quarterly rate.

$r_{eff,qtrly} =$

e) Find the Annualised Percentage Rate (APR), compounding every week. Assume 52 weeks per year. ($r_{APR,comp\ weekly}$).

$r_{APR,comp\ weekly} =$

f) Find the APR compounding per day. Assume 30 days in a month and 360 days in a year.

$r_{APR,comp\ daily} =$