**STAT2032/6046 EXCEL Workshop**

**Case Study 1**

Using Excel spreadsheets to compute the present values of the following three 20-year immediate annuities with monthly payments. Please use both effective interest rate 5% p.a. and nominal interest rate 5% p.a. convertible monthly.

1. Level payment $100 payable monthly;
2. Arithmetic increasing payment payable monthly with increment: $10 per month and the initial payment is $100;
3. Geometric increasing payment payable monthly with increasing rate 2% per month and the initial payment is $100.

**Case Study 2**

Using Excel spreadsheets to compute the outstanding balances at the end of 20 years of the following three loans with monthly repayments (payable at the end of each month). The initial principal of the loan is $300,000. Please use both effective interest rate 6% p.a. and nominal interest rate 6% p.a. convertible monthly.

1. Level repayment $2000 payable monthly;
2. Arithmetic increasing repayment payable monthly with increment: $150 per month and the initial payment is $2000;
3. Geometric increasing repayment payable monthly with increasing rate 2% per month and the initial payment is $2000
4. If you would like to pay off the loan (1) at the end of 20 years, how much should the level repayment be in (1)?

**Case Study 3**

Using Excel spreadsheets to compute the bond price of a $10,000 bond redeemed at par in 10 years. The bond pays coupons half yearly at 8% p.a., with the next coupon due in 6 months. The investor requires a net yield of 8% p.a. convertible semi-annually. The income tax and capital gain taxes are 20% and 10% respectively.