MATH4511 Quantitive Methods for Fixed Income Derivatives, 2017-18 Fall
Quiz 02(T1A)

Name: _____ **ID No.:** _____ **Tutorial Section:**_____

1. (20 points)

yield	bond price	option price
3.99%	108.2615	8.2148
4.00%	108.1757	8.1506
4.01%	108.0901	8.0866

(1) According to the table above, calculate the DV01 of the bond and option with yield 4%.
(2) How to hedge a short position of this bond option (face value $1m) by using the bond to make the portfolio "DV01 neutral"?

2. (10 points) Assume that the term structure of monthly compounded rates is flat at 6%. Find the monthly payment of a 15-year, $100,000 mortgage.

3. (20 points)

A: a 10-year zero-coupon bond;
B: a portfolio of 2-year and 30-year zero-coupon bond with weights 0.8 and 0.2.
Suppose the current yield curve is flat at 3%. Compare the duration and convexity of A and B.