

Introduction to Finance
Quiz 3

1. Suppose that a perpetual government bond or consol which pays \$300 every 6 months (the next payment is exactly six months from settlement) sells for \$10,000.

(a) (**8 points**) What is the bond equivalent yield on this consol?

(b) (**8 points**) What is the continuously compounded yield on this consol?

2. (**20 points**) Using the annuity / lump-sum decomposition show the value of a 5% 30-year Treasury bond on its issue date if its yield to maturity is 6.4%, on a bond equivalent basis.

3. **(20 points)** A young person would like to ensure an income when she retires of \$4,500 per month, for 25 years. Assuming that the relevant yield on such an annuity will be 4%, when she retires, how much will she have to have in her retirement account to achieve this goal?
4. Suppose that your bank offers a traditional fixed-rate, 30-year mortgage with monthly payments for \$400,000 at 5%.
- (a) **(8 points)** What is the equivalent annual yield on this mortgage?

(b) **(16 points)** What is the monthly payment on this mortgage?

(c) **(20 points)** Show the amount of the first and second payments that go to interest and principal.