

Finance 510-A
Problem Set to prepare for Quiz 3

1. A British government console is a perpetual obligation to pay £80 every six months. What are the bond-equivalent yield and the continuously-compounded yield on this console if today is an interest payment date, and its market price is:
 - (a) £3,200?
 - (b) £2,700?
 - (c) £3,700?

2. Consider the problem of buying a \$625,000 house with a 20% down payment with 2 financing options. The first is a 30-year fixed rate mortgage with monthly payments and interest rate of 5%. The second is a 15-year fixed rate mortgage with bi-monthly payments (i.e., 24 payments per annum) and interest rate of 5%.
 - (a) What are the periodic payments of each mortgage?
 - (b) Your mortgage broker suggests that the 15-year mortgage is a better deal because the total cash flows are lower. Is he correct? Explain.

3. A note or bond is best viewed as a portfolio of zero-coupon bonds, since we can use the appropriate spot rate to evaluate each coupon payment. But if we know a bond's yield to maturity, we can obtain its value as the sum of an annuity and a lump sum. Of course this only works on the issue date or an interest payment date. Suppose that today is February 15, 2019, obtain the value of the following bonds using the annuity and lump sum approach:
 - (a) 4% 2/15/2020 note with a yield to maturity of 3.3%.
 - (b) 4% 8/15/2021 note with a yield to maturity of 3.65%.
 - (c) 3.5% 2/15/2022 note with a yield to maturity of 3.9%.
 - (d) 3% 8/15/2047 bond with a yield to maturity of 4.22%.

Your answers should be in-line with your predictions given by the relationship between the instrument's coupon and yield.