M	MAP 4170 Name:	Name:	
Te	Test 3	Date: November 13, 2014	
Sh	Show sufficient work and clearly mark your answers. Each pr	roblem is worth 10 points.	
1.	1. A special 10-year bond, redeemable at 1000, has increasin each coupon is 3% more than its preceding coupon. The in Determine the price of the bond to yield 5% annual effective	nitial coupon is 100.	
	(A) 1480		
	(B) 1490		
	(C) 1500		
	(D) 1510		
	(E) 1520		
2.	2. A 20-year 1000 face value callable bond with 6% semianners the end of any year starting with year 16. The redemption except year 18, in which the redemption value is 1150. De an investor should pay in order to guarantee a semiannual experience.	value is 1200 for all years termine the maximum price	
	(A) 833		
	(B) 843		
	(C) 847		
	(D) 868		
	(E) 878		

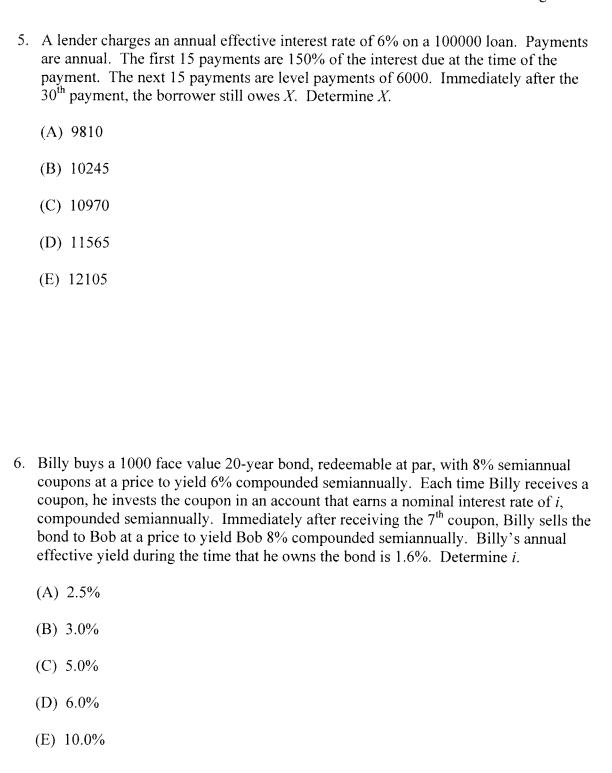
3. You are given the following information on Bonds A and B:

	Bond A	Bond B
Term	n years	2n years
Annual coupon amount	K	K
Annual effective yield	i	i
Redemption Value	C	(See below)
Price	10000	P

Bond B is such that C will be redeemed at the end of year n, and another C will be redeemed at the end of year 2n. Given  $(1+i)^n = 2.2$ , determine the price P of Bond B.

- (A) Less than 10000
- (B) Greater than or equal to 10000, but less than 12000
- (C) Greater than or equal to 12000, but less than 14000
- (D) Greater than or equal to 14000, but less than 16000
- (E) Greater than or equal to 16000

- 4. A 30-year loan is repaid with level annual payments of 5500. The balance on the loan immediately before the 29<sup>th</sup> payment is 10500. Determine the amount of principal repaid with the 15<sup>th</sup> payment.
  - (A) 1200
  - (B) 1280
  - (C) 1315
  - (D) 1400
  - (E) 1435



7.	Smith lends Brown 10000. Brown repays the loan with 10 annual payments of 1000 plus interest on the unpaid balance at 8% annual effective. Each time Smith receives a payment, she invests the payment in an account that earns 6% annual effective. Determine Smith's annual yield on the loan.
	(A) 4.5%
	(B) 5.3%
	(C) 6.1%
	(D) 6.9%
	(E) 7.7%
8.	A loan of $L$ is to be repaid using the sinking fund method with annual payments for 10 years. The lender charges 10% annual effective and deposits into the sinking fund earn 12% annual effective. The total annual payment is 345 less than the payments would be if the borrower amortized the loan with level annual payments for 10 years at 10% annual effective. Determine $L$ .
	(A) Less than 61000
	(B) Greater than or equal to 61000, but less than 63000
	(C) Greater than or equal to 63000, but less than 65000
	(D) Greater than or equal to 65000, but less than 67000

(E) Greater than or equal to 67000

9.	An <i>n</i> -year loan of $L$ is amortized with level monthly payments of 1640. The amount of interest paid in the 4 <sup>th</sup> month is 1240 and the amount of interest paid in the 17 <sup>th</sup> month is 1140. Determine $L$ .
	(A) 72415
	(B) 72560
	(C) 72780
	(D) 72965
	(E) 73155
10.	An <i>n</i> -year bond with annual coupons of 50 is bought to yield 4% annual effective. The accumulation of discount in the 8 <sup>th</sup> year is 8. Determine the price of the bond.
	(A) 1100
	(B) 1105
	(C) 1250
	(D) 1395
	(E) 1400