

61 Questions for Extra Credit Points. Due 12/16 (Wednesday)
(Please show your work and provide your explanation)

You need to show your work and explanations. Jotting down only the answers is not acceptable. If you do all 100 questions, you will get up to 3 extra points added to your final total score (after I determine your total score based on mid-terms, HWs, and the final).

Chapter 5

1. You plan to analyze the value of a potential investment by calculating the sum of the present values of its expected cash flows. Which of the following would lower the calculated value of the investment?
 - a. The cash flows are in the form of a deferred annuity, and they total to \$100,000. You learn that the annuity lasts for only 5 rather than 10 years, hence that each payment is for \$20,000 rather than for \$10,000.
 - b. The discount rate increases.
 - c. The riskiness of the investment's cash flows decreases.
 - d. The total amount of cash flows remains the same, but more of the cash flows are received in the earlier years and less are received in the later years.
 - e. The discount rate decreases.

b

2. Which of the following statements is CORRECT?
 - a. The cash flows for an ordinary (or deferred) annuity all occur at the beginning of the periods.
 - b. If a series of unequal cash flows occurs at regular intervals, such as once a year, then the series is by definition an annuity.
 - c. The cash flows for an annuity due must all occur at the beginning of the periods.
 - d. The cash flows for an annuity may vary from period to period, but they must occur at regular intervals, such as once a year or once a month.
 - e. If some cash flows occur at the beginning of the periods while others occur at the ends, then we have what the textbook defines as a variable annuity.

c

3. You are considering two equally risky annuities, each of which pays \$5,000 per year for 10 years. Investment ORD is an ordinary (or deferred) annuity, while Investment DUE is an annuity due. Which of the following statements is CORRECT?
 - a. The present value of ORD must exceed the present value of DUE, but the future value of ORD may be less than the future value of DUE.
 - b. The present value of DUE exceeds the present value of ORD, while the future value of DUE is less than the future value of ORD.
 - c. The present value of ORD exceeds the present value of DUE, and the future value of ORD also exceeds the future value of DUE.

- d. The present value of DUE exceeds the present value of ORD, and the future value of DUE also exceeds the future value of ORD.
- e. If the going rate of interest decreases from 10% to 0%, the difference between the present value of ORD and the present value of DUE would remain constant.

d

4. Your uncle is about to retire, and he wants to buy an annuity that will provide him with \$75,000 of income a year for 20 years, with the first payment coming immediately. The going rate on such annuities is 5.25%. How much would it cost him to buy the annuity today?

- a. \$825,835
- b. \$869,300
- c. \$915,052
- d. \$963,213
- e. \$1,011,374

d

BEGIN Mode

N	20
I/YR	5.25%
PMT	\$75,000
FV	\$0.00
PV	\$963,213

5. Suppose you inherited \$275,000 and invested it at 8.25% per year. How much could you withdraw at the end of each of the next 20 years?

- a. \$28,532
- b. \$29,959
- c. \$31,457
- d. \$33,030
- e. \$34,681

a

N	20
I/YR	8.25%
PV	\$275,000
FV	\$0.00
PMT	\$28,532

6. Suppose a bank offers to lend you \$10,000 for 1 year on a loan contract that calls for you to make interest payments of \$250.00 at the end of each quarter and then pay off the principal amount at the end of the year. What is the effective annual rate on the loan?

- a. 8.46%
- b. 8.90%
- c. 9.37%
- d. 9.86%
- e. 10.38%

e

Interest payment: \$250.00

	0	1	2	3	4
CFs:	10,000	-250	-250	-250	-250
					-10,000
	10,000	-250	-250	-250	-10,250

IRR (quarterly) = 2.50%

Annual effective rate = 10.38% vs. nominal rate = 10.00%

7. Your bank offers to lend you \$100,000 at an 8.5% annual interest rate to start your new business. The terms require you to amortize the loan with 10 equal end-of-year payments. How much interest would you be paying in Year 2?

- a. \$7,531
- b. \$7,927
- c. \$8,323
- d. \$8,740
- e. \$9,177

b

Find the required payment:

N	10	
I	8.5%	
PV	\$100,000	
FV	\$0	
PMT	\$15,241	Found with a calculator or Excel.

Amortization schedule (first 2 years)

Year	Beg. Balance	Payment	Interest	Principal	End. Balance
1	100,000	15,241	8,500	6,741	93,259
2	93,259	15,241	7,927	7,314	85,945

Chapter 6

1. Assume that interest rates on 20-year Treasury and corporate bonds are as follows:

T-bond = 7.72% AAA = 8.72% A = 9.64% BBB = 10.18%

The differences in these rates were probably caused primarily by:

- a. Tax effects.
- b. Default risk differences.
- c. Maturity risk differences.
- d. Inflation differences.
- e. Real risk-free rate differences

b

2. A bond trader observes the following information: