

Exercise 2: Time Value of Money-Annuity (Chapter 6)

Name: _____ ID: _____ Sec: _____ Date: _____

1. What is the future value of each of the following streams of payments?
 - a. \$500 a year for 10 years compounded annually at 5 percent
 - b. \$100 a year for 5 years compounded annually at 10 percent
 - c. \$35 a year for 7 years compounded annually at 7 percent
 - d. \$25 a year for 3 years compounded annually at 2 percent
2. What is the present value of the following annuities?
 - a. \$2,500 a year for 10 years discounted back to the present at 7 percent
 - b. \$70 a year for 3 years discounted back to the present at 3 percent
 - c. \$280 a year for 7 years discounted back to the present at 6 percent
 - d. \$500 a year for 10 years discounted back to the present at 10 percent
3. Emily Clarks purchased a new house for \$150,000. She paid \$30,000 up front and agreed to pay the rest over the 25 years in 25 equal annual payments that included principal payments plus 10 percent compound interest on the unpaid balance. What will these equal payment be?
4. To pay for your education. You've taken out \$25,000 in student loans. If you make monthly payments over 15 years at 7 percent compounded monthly, how much are your monthly student loan payments?
5. How long will it take to pay off a loan of \$55,000 at an annual rate of 10 percent compounded monthly if you make monthly payment of \$600?
6. Determine the present value of an annuity due of \$1,000 per year for 10 years discounted back to the present at an annual rate of 10 percent. What would be the present value of this annuity due if it were discounted at an annual rate of 15 percent?
7. What is the present value of the following?
 - a. A \$1000 perpetuity discounted back to the present at 12 percent
 - b. A \$95 perpetuity discounted back to the present at 5 percent
8. What is the present value of a perpetuity stream of cash flows that pays \$50,000 at the end of Year 1 and then grows at a rate of 6 percent per year indefinitely? The rate of interest used to discount cash flows is 10 percent?

FIN 3701 (Dr. Sarina)

9. Ryan Reynolds has signed a contract that will pay him \$80,000 at the end of each year for the next six years, plus an additional \$100,000 at the end of Year 6. If 8 percent is the appropriate discount rate what is the present value of this contract?
10. Brad Pitt has signed has signed a contract that will pay him \$80,000 at the beginning of each year for the next six years, plus an additional \$100,000 at the end of Year 6. If 8 percent is the appropriate discount rate what is the present value of this contract?