

FINC 3610: Principles of Business Finance

Time Value of Money Practice Problems

1. You are looking to purchase a home automation system when you graduate in two years. You plan to deposit the money in an investment account earning 8 percent annually. The anticipated cost of the system in two years is \$2,500. How much must you deposit today?
2. When you were born 21 years ago, your Aunt Burtha put \$2,000 into a saving account for you. The account has earned an average annual return of 4 percent per year, and nothing else has been deposited or withdrawn from the account. How much is there today?
3. Aunt Burtha also put \$2,000 into a different savings account for your brother when he was born 18 years ago. If his account has \$4,813.24 in it today, what rate of return did his account earn?
4. You decide to borrow money from Cousin Vinnie and he has agreed to a 20 percent interest rate per year. If you borrowed \$200 last year, and know you have to pay him in full exactly \$716.64 (and make no other payments to him), how long from now until you must pay him back?
5. Five years ago, you bought a piece of art at auction for \$1.2 million. Yesterday, you sold that piece at auction for \$2,630,937.64. You also purchased a new piece yesterday for \$300,000. If the piece you just bought earns the same rate of return as the first one, how much will you be able to sell it for in 8 years?
6. You plan to save for a Caribbean cruise. You deposit \$500 today, \$250 in two years, and \$1,000 in three years. If your investment account earns 9 percent per year, how much will you have in five years?
7. Which do you prefer: (1) receiving \$1,000 in five years when the interest rate is 3 percent per quarter or (2) receiving \$1,500 in six years when the interest rate is 6 percent every six months?
8. You have won a lawsuit and the court has arranged for the defendant to pay you \$7,500 per year for the next three years. If the appropriate discount rate is 8 percent, what is the value of your settlement today?
9. Last year, you borrowed money from Cousin Vinnie and he agreed to a 25 percent interest rate per year. If you borrowed \$250, and know you have to pay him in full exactly \$488.28 (and make no other payments to him), what will be the total length of the loan?
10. An investment offers a return of 1 percent every month if you deposit a minimum of \$20,000. If you make the minimum deposit today and do not make any additional deposits, how much will you have in your account in 20 years?