Problems

Answers Appear in Appendix B

EASY PROBLEMS 1–8

(4–1) Future Value of a Single Payment

If you deposit $10,000 in a bank account that pays 10% interest annually, how much will be in your account after 5 years?

(4–2) Present Value of a Single Payment

What is the present value of a security that will pay $5,000 in 20 years if securities of equal risk pay 7% annually?

(4–3) Interest Rate on a Single Payment

Your parents will retire in 18 years. They currently have $250,000, and they think they will need $1 million at retirement. What annual interest rate must they earn to reach their goal, assuming they don't save any additional funds?

(4–4) Number of Periods of a Single Payment

If you deposit money today in an account that pays 6.5% annual interest, how long will it take to double your money?

(4–5) Number of Periods for an Annuity

You have $42,180.53 in a brokerage account, and you plan to deposit an additional $5,000 at the end of every future year until your account totals $250,000. You expect to earn 12% annually on the account. How many years will it take to reach your goal?

(4–6) Future Value: Ordinary Annuity versus Annuity Due

What is the future value of a 7%, 5-year ordinary annuity that pays $300 each year? If this were an annuity due, what would its future value be?

(4–7) Present and Future Value of an Uneven Cash Flow Stream

An investment will pay $100 at the end of each of the next 3 years, $200 at the end of Year 4, $300 at the end of Year 5, and $500 at the end of Year 6. If other investments of equal risk earn 8% annually, what is this investment's present value? Its future value?