- 1. At a 5% interest rate per year compounded annually, the present value (PV) of a 10-year ordinary annuity with annual payments of \$2,000 is \$15,443.47. The PV of a 10-year annuity due with the same interest rate and payments is closest to:
  - A. \$14,708.
  - B. \$16,216.
  - c. \$17,443.
- 2. A client invests €20,000 in a four-year certificate of deposit (CD) that annually pays interest of 3.5%. The annual CD interest payments are automatically reinvested in a separate savings account at a stated annual interest rate of 2% compounded monthly. At maturity, the value of the combined asset is closest to:
  - A. €21,670.
  - B. **€22,890**.
  - c. €22,950.
- 3. A couple plans to pay their child's college tuition for 4 years starting 18 years from now. The current annual cost of college is C\$7,000, and they expect this cost to rise at an annual rate of 5 percent. In their planning, they assume that they can earn 6 percent annually. How much must they put aside each year, starting next year, if they plan to make 17 equal payments?
  - A. 1,913.22
  - B. 2,078.89
  - C. 2,221.58
- 4. An investor is reviewing the performance of his portfolio manager over the last four quarters. The outflows and inflows to the portfolio was made at the beginning of each quarter. The table below summarize the inflows and outflows as well as the valuation of the portfolio. The ending value is the portfolio's value just after the cash inflow or outflow at the beginning of the quarter. What is the time-weighted rate of return of the portfolio?

Quarter	Beginning value	Cash inflows or outflows at the beginning	Ending value
		of the quarter	
1	400,000	20,000	500,000
2	500,000	30,000	600,000
3	600,000	-40,000	700,000
4	700,000	50,000	700,000

- A. 57.23%
- B. 11.88%
- C. 75.00%

- A U.S. Treasury bill (T-bill) has 180 days to maturity and a bank discount yield of 4.25%.
  The effective annual yield (EAY) for the T-bill is closest to:
- A. 4.38%.
- B. 4.32%.
- C. 4.45%.