3.18. Planning Retirement Your uncle has $90,000 that he wishes to invest now in order to use the accumulation for purchasing a retirement annuity in five years. After consulting with his financial advisor, he has been offered four types of fixed-income investments, labeled as investments A, B, C, and D.

- Investments A and B are available at the beginning of each of the next five years (call them years 1–5). Each dollar invested in A at the beginning of a year returns $1.20 (a profit of $0.20) two years later, in time for immediate reinvestment. Each dollar invested in B at the beginning of a year returns $1.36 three years later.
- Investments C and D will each be available just once in the future. Each dollar invested in C at the beginning of year 2 returns $1.66 at the end of year 5. Each dollar invested in D at the beginning of year 5 returns $1.12 at the end of year 5.
- Your uncle is obligated to make a balloon payment on an existing loan in the amount of $24,000 at the end of year 3. He wants to make that payment out of the investment account.

(a) Devise an investment plan for your uncle that maximizes the value of the investment account at the end of five years. How much money will be available for the annuity in five years?

(b) Show the network diagram corresponding to the solution in **(a).** That is, label each of the arcs in the solution and verify that the flows are consistent with the given information.