# finco

Finco Investment Corporation must determine investment strategy for the firm during the next three years. At present (time 0), $100,000 is available for investment. Investments A, B, C, D, and E are available. The cash flow associated with investing $1 in each investment is given below (in dollars):

|            | Time |       |       |       |
|------------|------|-------|-------|-------|
| Investment | 0    | 1     | 2     | 3     |
| A          | $-1$ | +0.50 | +1    | 0     |
| B          | 0    | $-1$  | +0.50 | +1    |
| C          | $-1$ | +1.20 | 0     | 0     |
| D          | $-1$ | 0     | 0     | +1.90 |
| E          | 0    | 0     | $-1$  | +1.50 |

Time 0 corresponds to the present, time 1 corresponds to 1 year from now, and so on. For example, $1 invested in investment B requires a $1 cash outflow at time 1 and returns $0.50 at time 2 and $1 at time 3.

To ensure that the company's portfolio is diversified, Finco requires that at most $75,000 be placed in any single investment. In addition to investments A-E, Finco can earn interest at 8% per year by keeping uninvested cash in money market funds. Returns from investments may be immediately reinvested. For example, the positive cash flow received from investment C at time 1 may immediately be reinvested in investment B. Finco cannot borrow funds, so the cash available for investment at any time is limited to cash on hand.

Write a linear program that will maximize cash on hand at time 3.

*Material by Cliff Stein.*