Spreadsheet Financial Functions

Excel ***Lotus 1-2-3***

Net Present Value

=NPV (interest rate, range) **@NPV** (i, range)

Interest rate as a decimal fraction per period used in the range.

V_k = series of uniform time interval cash flows from k = 1 to k = ***n***.
Note: cells are assumed to be in integer sequence and ***n*** is determined by the number of cells in the range specified.

Uses formula **:** NPV = sum of $\{ V_k / (1 + i)^k \}$ where $k = 1 \rightarrow n$

To find the net present value of an investment where you make an initial cash flow immediately (time zero, k = 0), and follow it by a series of future cash flows; **you must factor the initial flow separately since it is not affected by the interest.**

Example **:** Overall Net Present Value is calculated by
=Initial $ + NPV(i rate, series)
Note: positive values are treated as income and negative values are expenses.

Discounted Cash Flow Rate of Return

also know as Internal Rate of Return, IRR

=IRR (range, guess i) **@IRR** (guess i, range)

Guess is a fraction that represents your starting estimate of the internal rate of return.
In general, specify a guess between 0 and 1 { i.e. 0 % and 100 % }.
Note **:** In ***Excel***, the guess is optional while ***Lotus 1-2-3*** requires a guess.
in ***Excel*** if guess is omitted, it is assumed 0.1 { i.e. 10 % }.

Range is the cell range containing the cash flow amounts.
Note **:** positive values are treated as income or cash inflows and negative values are expenses or cash outflows.

The first cell in the range **MUST** be a **NEGATIVE** value.

The range starts with time zero and progresses through time period ***n*** determined by the number of cells in the range.

If the iteration cannot approximate the result to within 0.0000001 (0.00001 %) after 20 tries, the result will be displayed as the value **# NUM !** in ***Excel***
ERR in ***Lotus 1-2-3***