HW 0 Monthly Deposits Plus Interest

Your client needs a program that enables her to calculate the ending balance of a series of equal monthly deposits plus interest. Your program will prompt the user to enter the number of months over which deposits will be made, a deposit amount and an annual interest, which must be converted to monthly rate. For instance, 3% as an annual rate becomes 0.03 / 12 or 0.0025 as a decimal value. We assume that deposits are made at the beginning of a month; thus each deposit will earn a full month of interest.

If the user enters the following values: 12 for the number of months, $500 for the periodic deposit and 3% for the annual interest rate, the amount deposited in month 1 (I say "month 1" because this process doesn't need to follow a calendar year), will receive 12 months of interest at a monthly rate of 0.0025, then amount deposited in month 2 will receive 11 months of interest at this rate, and so on until the amount deposited in month 12 receives 1 month of interest at this rate. Here's demonstration of this calculation:

Periodic deposit	500
Annual interest rate	3.00%
Monthly interest rate	0.0025

Formula for calculating ending balance :
deposit*(1 + monthly interest rate)^number of months (^ indicates exponentiation)

	Deposit	Number of months of Interest Accrued	1 + monthly interest rate	(1 + monthly interest rate)^number of months	Times Deposit
Month 1	500	12	1.0025	1.030416	515.2080
Month 2	500	11	1.0025	1.027846	513.9230
Month 3	500	10	1.0025	1.025283	512.6415
Month 4	500	9	1.0025	1.022726	511.3630
Month 5	500	8	1.0025	1.020176	510.0880
Month 6	500	7	1.0025	1.017632	508.8160
Month 7	500	6	1.0025	1.015094	507.5470
Month 8	500	5	1.0025	1.012563	506.2815
Month 9	500	4	1.0025	1.010038	505.0190
Month 10	500	3	1.0025	1.007519	503.7595
Month 11	500	2	1.0025	1.005006	502.5030
Month 12	500	1	1.0025	1.002500	501.2500

Sum of deposits	6000

End-of-Year total 6098.4

Even if you're mathematically clever enough to derive a formula that can perform this calculation in one statement, use a loop to solve this problem.

Your program should display a table like the one above plus the sum of deposits and the end-of-year total.