Answer to Question #90143 – Math – Financial Math

Question

You deposit $100 each month in a retirement fund that pays 6% APR, compounde d monthly. What is the total value of the fund after 30 years?

Solution

This is an ordinary annuity problem since deposits or payments are made at the end of each month

$$FV\ Ordinary\ Annuity = C\left[\frac{\{(1+i/n)^{nt}-1\}}{i/n}\right],$$

$$FV\ Ordinary\ Annuity = 100\left[\frac{\left\{\left(1+\frac{0.06}{12}\right)^{30*12}-1\right\}}{\frac{0.06}{12}}\right]$$

$$=\$100451.50.$$

Answer: $100451.50.